DOCUMENT RESUME

ED 383 807 UD 030 478

TITLE	Indicators of Children's Well-Being: Conference Papers. Cross-Cutting Issues; Population, Family, and Neighborhood; Social Development and Problem Behaviors. Volume III. Special Report Series. Special Report Number 60c.
INSTITUTION	Wisconsin Univ., Madison. Inst. for Research on Poverty.
PUB DATE	May 95
NOTE	192p.; For Volumes I and II, see UD 030 476-477. Papers presented at a conference on "Indicators of Children's Well-Being" (Bethesda, MD, November 17-18, 1994).
AVAILABLE FROM	Institute for Research on Poverty, 1180 Observatory Drive, Madison, WI 53706 ($8).
PUB TYPE	Collected Works - Conference Proceedings (021) -- Reports - Evaluative/Feasibility (142)
EDRS PRICE	MF01/PC08 Plus Postage.
DESCRIPTORS	Adolescents; *Behavior Problems; Child Development; Children; *Child Welfare; Ethnicity; Evaluation Methods; *Family Environment; Measurement Techniques; Neighborhoods; *Population Distribution; Racial Differences; Research Problems; *Social Development
IDENTIFIERS	*Indicators

ABSTRACT

Papers in this volume explore indicators of children's well-being in the following areas: cross-cutting issues; population, family, and neighborhood; and social development and problem behaviors. The first section includes: (1) "Potential and Problems in Developing Indicators on Child Well-Being from Administrative Data" (Robert M. Goerge); (2) "Potential and Problems in Developing Community-Level Indicators of Children's Well-Being" (Claudia J. Coulton); (3) "Context and Connection in Social Indicators: Enhancing What We Measure and Monitor" (Marc L. Miringoff and Marque-Luisa Miringoff). The second section includes: (1) "Demographic Change and the Population of Children: Race/Ethnicity, Immigration, and Family Size" (Dennis P. Hogan and David J. Eggebeen); (2) "Family Structure, Stability, and the Well-being of Children" (Gary D. Sandefur); (3) "The Influence of Neighborhoods on Children's Development: A Theoretical Perspective and a Research Agenda" (Frank F. Furstenberg, Jr. and Mary Elizabeth Hughes); and (4) comments by Donald Hernandez. Papers in the third section include: (1) "Indicators of Positive Development in Early Childhood: Improving Concepts and Measures" (J. Lawrence Aber and Stephanie Jones); (2) "Indicators of Problem Behaviors and Problems in Early Childhood, Draft" (John M. Love); (3) "Positive Indicators of Adolescent Development: Redressing the Negative Image of American Adolescents" (R. Takanishi, A. M. Mortimer, and T. J. McGourthy); (4) "Indicators of Adolescent Problem Behaviors" (Bruce P. Kennedy and Deborah Prothrow-Stith); and (5) a discussant paper, "Social Development and Problem Behaviors" (J. J. Card and James L. Peterson). Most papers contain references. (SLD)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☒ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
● Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Bert Penn
Institute Research Poverty
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

University of Wisconsin-Madison

Institute for Research on Poverty

Special Report Series

ED 383 807

IRP SPECIAL REPORT

Indicators of Children's Well-Being:
Conference Papers

VOLUME III: CROSS-CUTTING ISSUES; POPULATION, FAMILY, AND NEIGHBORHOOD; SOCIAL DEVELOPMENT AND PROBLEM BEHAVIORS

SR #60c May 1995

UD030478

BEST COPY AVAILABLE

Institute for Research on Poverty
Special Report no. 60c

Indicators of Children's Well-Being:
Conference Papers

Volume III:
Cross-Cutting Issues; Population, Family, and Neighborhood; Social Development and Problem Behaviors

May 1995

Contents

IRP Special Report 60c
Indicators of Children's Well-Being: Conference Papers
Volume III: Cross-Cutting Issues; Population, Family, and Neighborhood; Social Development and Problem Behaviors

Cross-Cutting Issues 1

1. Potential and Problems in Developing Indicators on Child Well-Being from Administrative Data 3
Robert M. Goerge

2. Potential and Problems in Developing Community-Level Indicators of Children's Well-Being 15
Claudia J. Coulton

3. Context and Connection in Social Indicators: Enhancing What We Measure and Monitor . 35
Marc L. Miringoff and Marque-Luisa Miringoff

Population, Family, Neighborhood 43

1. Demographic Change and the Population of Children: Race/Ethnicity, Immigration, and Family Size 45
Dennis P. Hogan and David J. Eggebeen

2. Family Structure, Stability, and the Well-Being of Children 63
Gary D. Sandefur

3. The Influence of Neighborhoods on Children's Development: A Theoretical Perspective and a Research Agenda 81
Frank F. Furstenberg, Jr., and Mary Elizabeth Hughes

Discussant's Comments 103
Donald Hernandez

Social Development and Problem Behaviors 111

1. Indicators of Positive Development in Early Childhood: Improving Concepts and Measures 113
J. Lawrence Aber and Stephanie Jones

2. Indicators of Problem Behaviors and Problems in Early Childhood 129
John M. Love

3. Positive Indicators of Adolescent Development: Redressing the Negative Image of American Adolescents 149
R. Takanishi, A. M. Mortimer, and T. J. McGourthy

4. Indicators of Adolescent Problem Behaviors 163
Bruce P. Kennedy and Deborah Prothrow-Stith

Discussant's Comments 175
J. J. Card and James L. Peterson

CROSS-CUTTING ISSUES

Potential and Problems in Developing Indicators on Child Well-Being from Administrative Data

Robert M. Goerge
Chapin Hall Center for Children
University of Chicago

January 6, 1995

Paper prepared from the Conference on Indicators of Children's Well-Being, November 17-18, 1994, Rockville, MD. sponsored by the Institute For Research on Poverty; Child Trends, Inc.; the Office of The Assistant Secretary for Planning and Evaluation (HHS); the National Institute Of Child Health and Human Development and the Annie E. Casey Foundation

Potential and Problems in Developing Indicators on Child Well-Being from Administrative Data

INTRODUCTION

Investigating the potential and problems in the development of indicators of children's well-being from administrative data is not a new activity (U.S. Department of Commerce, 1981). However, during the last 2 decades, the subject of this activity has increasingly become *computerized* administrative data. Until the 1980s, administrative data would have been thought of as paper files rather than computerized data. It is arguable that only in the last 10 years have information systems become "mature" and accessible enough to be good sources of data on children and their families. In this paper, we discuss how administrative data is currently used for providing child indicators or child well-being and how the development of these indicators could be facilitated through improved analysis and data manipulation, better data collection, and improved information and data policy.

Administrative data is data that is regularly and consistently collected in support of an organization's function and stored within that organization's information system. Administrative databases are created primarily to monitor utilization, to determine the consumption of resources and to ascertain the capacity to supply services (U.S. Dept. of Health and Human Services, 1991). Although administrative data is not collected primarily for research purposes, it can become a resource for research and statistics. Administrative data is culled from systems that have two basic functions. A particular system may stress one of these functions over the other. The first function is reporting the purpose of accountability or reimbursement from an external or oversight agency (usually a federal one). The second is internal tracking of individuals or the services that they receive for the purpose of decision support and supporting other activities of the organization. The tracking function is what we think about when we refer to management information systems. Typically, the tracking system provides richer data, since external reporting in the human services typically is limited to eligibility of the individual for services and tracking data assumes that one is interested in information that identifies the individual served, the individuals providing the service, the services itself and the characteristics of these three entities.

Although there are some private sources, such as hospital and insurance records, this paper focuses on government human services administrative data that is used for statistical purposes and could be extremely useful in developing child indicators. They include publicly provided health care (Medicaid) utilization data, public health statistics, income maintenance (AFDC) eligibility and payment data, Food Stamps eligibility and payment data, child welfare service records, reported child abuse and neglect, primary and secondary education statistics, special education provision reporting, and family and juvenile court statistics. The use of administrative data for developing indicators will be compared to the use of social survey, such as the National Longitudinal Survey of Youth, High School and Beyond, the Survey of Income and Program Participation, the Panel Study on Income Dynamics, and U.S. Census Bureau data. All of the administrative data is used for other research purposes, e.g., basic research, evaluation or epidemiology, but we will confine our comments to the development of statistical indicators that can provide information on the population of children at various geographic levels.

Perhaps the best example of the use of administrative data for child indicators is vital statistics-primarily data on births and deaths. While some may claim that these are collected primarily for statistical purposes, each has a clear set of administrative purposes. Many events are triggered or made possible by the fact that a birth or death certificate is issued - essentially anything that requires proof of birth or death. These two sets of data form a cornerstone of the state and federal health statistics. From these two databases, the number of births, teenage births, births to unmarried mothers, and causes of adolescent death, to name just a few, are produced.

These two datasets also provide an example of how indicators can be developed by combining datasets. When birth certificates and death certificates are linked, it is possible, for example, to calculate infant mortality statistics. The importance and value of linking databases will be stressed in this paper as a method to develop new indicators and to increase the validity and accuracy of current indicators. This is often not possible with survey or Census Bureau data because of the lack of or inability (due to confidentiality restrictions) to use identifying information on individuals needed to link records.

Finally, administrative data may be the only hope to quickly develop more, timely or new state and local indicators on child well-being. Given the data collection expense of new or new waves of social surveys, even higher when coverage of state and local populations is required, and given that much administrative data already exist, this source is ideal for the short-term development of indicators that can be used to inform the public and policymakers.

CHARACTERISTICS OF ADMINISTRATIVE DATA

Researchers and policymakers do not really know how much administrative data can contribute either to the development of indicators or to more basic research. Because very few datasets are actually mined enough to understand what is available, surveys and census data are analyzed over and over again so that we know much more about what can be supported by such data. While the discussion below is not an exhaustive list of the characteristics, it provides the basis for a dialogue for additional debate and examination of the utility.

Population Coverage

Although not every state and local jurisdiction has administrative databases for each topic listed above, most larger jurisdictions have them and most jurisdictions are planning the computerization of their administrative data (Kliss and Alvey, 1984). For example, only one state lacks a Medicaid Management Information System, and it is currently being developed.

A particular administrative database typically covers the population receiving a particular service or resource, or those having a particular status. In many cases, data on all individuals who have ever been in the database is kept in the database or archived so that longitudinal information is available. One exception to this is child abuse and neglect reporting data, which is purged at particular times depending on the outcome of the abuse and neglect investigation.

Because administrative data, by definition, will cover the population of individuals or families with a particular status or receiving a particular service and that the address data, or some geographic data of these individuals is often available, developing indicators at the state or local level, or "small region monitoring", is quite possible (Bannister, 1994). Unlike national social surveys, which, because of cost, cannot have sampling frames that include every local region and in many cases have samples so small that even larger state indicators cannot be calculated reliably, the population coverage in administrative data allows for state and local indicators to be produced.

Collection of Data

Unlike social surveys or census data collection, administrative data collection is done by a professional whose primary responsibility is not data collection.[1] There are both positive and negative aspects of a professional collecting data. These workers are often affected by the results of an analysis of the administrative data, depending on how many operational or policy decisions are based on information from the MIS (Leginski, 1989). Also, there are other issues (e.g., worker's use of time or confidentiality) beyond the optimal data collection methods that affect the data collection. Data collection can vary over time because of change in operations or agency mandates. Finally, workers may take shortcuts or not provide certain data when they understand which data is actually used in the operation of the agency.

---

[1] Service and program eligibility workers (such as for AFDC, Medicaid, child support enforcement eligibility determination) may be an exception to this, since the collection of data used to determine eligibility is their primary function.

On the positive side, these workers may have an interest in the quality of the data they collect if they actually use the data for their own decision making (Mugford, et al., 1991; Bannister, 1992). It is a commonly held assumption in information systems development that the more the data is used, the better that data will be. For data items that are necessary or mandatory to complete administration functions, the amount of missing data can be minimal. There may be considerable access to the subjects so that incorrect data is more likely to be corrected than in social surveys or census data. Also, because the data are collected within the normal conduct of business, there is no interviewer inserted into the process to disrupt the lives of those studied, or to bias responses. This may be particularly important where data collection around child abuse and neglect or mental health, when it is difficult for an interviewer to be present during critical events.

Administrative data is also collected very close to the time when the event - birth, service receipt, a change in status-occurs. The date of that event is usually recorded exactly, so that the form of the data is complete in that it contains both the sequence of events and the time at which the event occurred (Coleman 1981; Tuma and Hannan, 1984). This type of data allows for the most precise and sophisticated analyses.

Since individual records must be accessed in administrative databases, and individuals must usually be contacted in the normal course of providing service or aid, identifying information, such as names, addresses, Social Security numbers, are usually accurate and maintained over the period during which the individual is in contact with the organization. This information allows for updating of service records, tracking individuals and families over time, and linkage of records to other databases.

Reliability, Validity and Accuracy Issues

Before administrative data can be used for statistical purposes, it is necessary to extensively review all data collection procedures and data definitions for any data that will be used for indicator development. This is not a research activity that has a clear protocol, each administrative dataset is documented to a varying extent. Information about how "good" the data is seldom documented and only available by interviewing those who maintain the database, use the data, or train those that will collect the data. There are usually multiple interviews and the knowledge about the dataset is often developed in an iterative and interactive manner. In fact, finding the individuals in a bureaucracy who actually know about all the fields in a database is also an iterative process. Learning about the reliability, validity and accuracy of data may only be possible after the data has been analyzed. For example, there may be dramatic variation among counties in a state, which may not be understood until the data is actually analyzed and experts can respond to the results.

Data that is actually used by a worker or by anyone (even a researcher!) is typically more accurate. The validity of a variable is largely dependent on what a worker believes it means. For example, the handicap status of a child may be recorded without having to verify that status by a diagnostic test. In such an instance, a worker by use "behavior disorder" to signify that those adults who are in contact with the child observe that he behaves "poorly." Studying the reliability of data is seldom done for the purposes of the organization or research. Quality control teams in data processing are rare. Again, as these data get used more, or as administrators of the organizations require more data and question the source of the data, more quality assurance will take place.

If workers receive sufficient training on the collection of data, we expect the data to be more reliable and valid (Iezzoni, et al.; 1992). If clear and complete documentation is available, workers are more likely to provide reliable information. The less training that is available on the more complex data fields, the less these fields should be used and the more other sources of data should be used for that topic. For example, the handicap field on foster children's records is extremely poor because workers are given no training on handicap identification and verification. Thus, this data has little reliability. Datasets which have more reliable handicap data (special education, for example) can be used to improve the data on the handicaps of foster children (Goerge, et al.; 1991).

Units of Analysis

Administrative data of the kind discussed in this paper is typically collected at the individual level. Very often individuals within a particular family are linked with a database. For example, members of a family will share parts of their same identification number and the relationships between members will be tracked However, the ability to group individuals depends very much on the purpose of the dataset. For example, there is usually little information on who the parents of a child in special education are since this data is primarily used for reporting and reimbursement, as opposed to tracking the child, which is more common in the classroom or regular education information systems. In these latter systems identification of relationships among family members is typically made because this information is needed to actually contact the family or to make the correct eligibility decision.

Focus on Negative Outcomes

The type of indicators one can most easily extract from administrative data are very much focused on negative outcomes and those events that should not happen (Iezzoni, 1990). How many children are born without prenatal care? How many infants die within the first months of their lives? How many children are part of AFDC grants? How many children are removed from the custody of their parents? This negativity arises primarily because the data is related to services to ameliorate problems.

One would expect that as the use of computers moves into more everyday life situations there will be more data available on the non-problematic aspects of children's lives. For examples, as Little Leagues develop computerized databases of who participates and as library card registries are computerized, these sorts of data might be used to develop positive indicators.

Cost

The cost of collecting administrative data is often hidden in the operational budgets of organizations (Iezzoni, et al.; 1992), while the high costs of collecting national data through surveys are easily determined. The costs of using administrative data for the development of indicators is not much less than that of using survey data after it has been collected. However, the organizations that collect survey data, including the Census, include the cleaning of the data and the formatting of data in the costs of collection. The cleaning and formatting of administrative data is often left up to the analysts that acquire and use the data. In the experience of the author, the cost of cleaning and formatting is often half to three-quarters of the cost of a particular research project using administrative data. However, the ongoing cost of using these data in subsequent projects may be reduced because of cleaning and formatting done in previous projects.

USING STATE AND LOCAL ADMINISTRATIVE DATA

Most of the national indicators are developed from data collected by state and county agencies. At the state or sub-state level, there is great variety and variability in the use and production of indicators from administrative data. Because of the lack of leadership in developing standards in the definitions and development of indicators, states and counties have obviously constructed indicators that address their particular context and needs. While it is often possible to take administrative data and do multi-state or county comparisons, these are often limited because of definition of data fields not being comparable from one jurisdiction to the next or because one can only use the data fields that are comparable, which may be less rich than a particular indicator might require (Mason and Gibbs, 1992; Larson and Alvarez, 1990).

Comparability

An example of this latter problem is the duration of receipt of a particular service, such as AFDC and the unit of analysis. Many states track the duration of a case, which is usually defined by who the head of the household is and includes members of that household. However, individual members enter and exit that household and these exits may not be precisely recorded or they may not be archived in a way that they are easily retrievable at a later date. This ambiguity prevents knowing exactly how long, for example, certain children were parts of AFDC grants or when the family changed from being an extended family group to a two-generational household (when the grandparent separated from the household). In states where individuals are tracked, it is possible to calculate individual-level durations of service.

Another example is coding the living arrangements of children in foster care. Very few states track whether a child in foster care is living with a relative. Since these homes are often treated similarly to foster family homes, they are likely to be coded as foster family homes. However, the nature of service and the home itself is quite different and in those states where it can be coded, we have seen large increases in home of relative foster care (Goerge, Wulczyn and Harden; 1994). Thus, the coding differences across states prevent the precise comparison of where foster children are actually living.

State and County Reporting

Many different reports on service utilization are developed by state or county agencies. In health care, state or public/private agencies collect hospital discharge data to describe all individuals who are hospitalized. Common discharge forms are used which increase the probability of accurate data. The unit of analysis of these data is often the episode of service rather than the individual, due to restrictions in the reporting and use of identifying information.

Family Assistance Management Information Systems (FAMIS) and Medicaid Management Information Systems (MMIS) have provided extensive information about those families who require income and health care assistance. Indicators from these programs are often cross-sectional so that while the FAMIS data are a tremendous source to replicate the longitudinal analysis of AFDC done by Bane and Ellwood, they have been underutilized in developing longitudinal indicators. Both of these systems were built and are maintained with matching funds from the federal government, increasing the probability that data is maintained well.

The use of child welfare service and child abuse and neglect administrative data varies tremendously from state to state, largely because of the quality of the reporting and tracking systems. As with AFDC, most state reports focus on the cross-sectional indicators of service, which are quite important for operational decision making, but less useful for understanding the outcomes of children and families in the system. A recent federal government initiative to develop better information systems in child welfare (State Automated Child Welfare Information Systems) bodes well for improving the data available to states, as well as the federal government.

Some states produce reports on students with handicapping conditions as identified through special education programs. These reports are then aggregated by the U.S. Department of Education into a yearly report (e.g., U.S. Department of Education, Office of Special Education and Rehabilitative Services; 1986). There is great variation in the identification of handicaps (Knitzer, et al; 1990). These indicators, however, are an excellent example of a service response to a condition as opposed to a measure of a condition in the general population. Given the general problem of diagnosing handicaps other than physical ones well, service provision may be a better indicator of the actual impairment that a child experiences in a particular setting (Scahill and Riddle, 1990). A debate on this topic is beginning, especially in the area of child mental health. As Supplemental Security Income becomes used by more families of children with disabilities, as these families becomes more aware of this benefit, it may be that such administrative data will provide better (or the best) information on the disabilities of children.

Regular education is an example in which there is a fine line between what is considered research or reporting data and administrative data (Hutchison, 1993). However, it is also the case that computerized management information systems are not universal and only beginning to be developed and refined in even the largest school systems. Test scores are both reported externally and maintained in administrative systems, where they exist. Dropout indicators are often measured differently from one district to the next.

The area of juvenile justice is certainly of great interest, and one in which there is more comparability within and across states. Uniform crime reports are an excellent example of how administrative data can be used to provide information on a most negative set of behaviors. Detention and incarceration indicators are often widely reported. A gap in reporting by states may be measures of juvenile delinquency, including status offenses.

Because of the general availability of vital statistics data, state and county health departments provide extensive reports on births, deaths, and the circumstances surrounding these events. One problem, however, that continues to plague public health as well as many other human service agencies is the lag in the reporting of the data relative to the time when the event occurred. This lag may not be as great as with surveys or census data, but when state reports are used for management purposes, the issue of the delay is magnified.

National Reporting

There are a number of national indicators developed by the federal government from administrative data. These include information from public health statistics and many of the programmatic indicators in the "Green" book. The National Center for Health Statistics, most likely the best human service example of federal use of administrative data, uses vital statistics data from states to provide an extensive set birth, death and population indicators (e.g., *Monthly Vital Statistics Reports*). They also use the National Hospital Discharge Survey, which is based on a sample of administrative data on hospital discharges, which could be expanded with today's technology to include the entire population of children who are hospitalized.

The "Green" book, produced by the U.S. House Ways and Means Committee until this year is an example of a compendium of statistics that makes the most out of the results of analyses of administrative data, including AFDC, child welfare, and Supplemental Security Income among others. In many cases, the discussions of results from surveys enhance the analyses of administrative data (provided to the Federal government by states), but more and better indicators are very much needed in many areas, including child care and child support enforcement. Much of the discussion relies on Census Bureau data or expenditure data which does not really describe the population participating in a program. A step in that direction is the development of tracking systems for child care and child support, which has already begun in many states.

The Kids Count project of the Annie E. Casey Foundation provides profiles of the condition of children in each of the states. Areas include child health, adolescent births, juvenile crime, teen unemployment and school dropout, poverty, and household structure. These reports very much depend on analyses of administrative data since it focuses on yearly changes at the state level. Vital statistics and uniform crime reports are a key to developing the comparative indicators in the Kids Count reports.

A few efforts in the child welfare field have been undertaken to develop comparable indicators across states. Two examples of these are the areas of child abuse and neglect and foster care. The National Child Abuse and Neglect Data System project of the National Center for Child Abuse and Neglect is a voluntary effort to include each state's aggregate and individual level data into a comparable structure (USDHHS/NCCAN; 1994). The current goal is to make the individual level data on abuse and neglect investigations comparable across 13 states. The Multistate Foster Care Data Archive Project of the Chapin Hall Center for Children, funded by DHHS, is a collaboration among seven states (currently) to develop comparable indicators on children in foster care from 1988 to the present (Goerge, Wulczyn and Harden; 1994). Both of these efforts require understanding how the data is collected and stored, and then calculating indicators that are valid across each of the states. The foster care project has recently completed this task for a series of the most important indicators in foster care and is expanding to include ten states.

DEVELOPING BETTER INDICATORS

Because each reporting or tracking system focuses on a limited set of outcomes and often neglects data fields that are not central to the "business" at-hand, a potential strategy for improving indicators would be to combine administrative databases or administrative databases and survey or census data (U.S. Department of Commerce, 1981). By mixing and matching fields from numerous databases, it is possible to increase the validity and accuracy of indicators. Perhaps most important, linking administrative data over years would provide both a better time-series and offer the possibility to track outcomes longitudinally (Hunter 1994; Goerge 1994).

For example, racial and ethnic identifiers from birth certificates are most likely better than any the race or ethnicity field in any other database (though that does not mean that they are absolutely accurate, valid or reliable). Linking birth certificate data to any dataset may improve the general treatment of race and ethnicity. Another example is combining indicators of a child's disability status from school, service agency, public health and survey data, which may provide the best epidemiological estimates of childhood disability available.

Combining data from multiple sources also begins to allow investigators to study issues of service overlap and children and families who have multiple problems. The question of whether most (~80%) of the resources are going to a few (~20%) of the families or children (the "80/20" question) is important for welfare policy and human service management. Also, knowing how many children are poor and victims of abuse or neglect or are poor and disabled would provide those interested in improving the lives of children better information for developing policies and service programs.

There has also recently been more discussion of doing an administrative census, which would combine various types of administrative data, including AFDC and other income maintenance, income tax returns, and Social Security data, to provide an alternative to the current method of data collection for the decennial census. Such an effort could provide better information on some issues and also data during inter-censal years and would also provide a base population (the denominator) and measurement system to yield better prevalence and incidence rates of the host of indicators discussed during the Child Indicators Workshop.

For example, in comparing the 1990 Census figures on minority infants with birth certificate data, we found a tremendous undercount in that subgroup (Goerge, et al.; 1993). We discovered this when we found the impossible, in that over 100 percent of infants in Chicago were part of AFDC grants. It appears that, despite the adjustments made by the Census Bureau, the census data undercount the number of African-American infants under 1 year of age living in Chicago. In order to calculate a more accurate number of children, we used Vital Statistics data on the number of live African-American births in Chicago from June 1989 to June 1990 and subtracted the number of infant deaths over the same period. In this situation, an administrative census would have provided more accurate statistics.

In order to do better small-region monitoring of child indicators, increased use of geocoding (address-matching) to allow for the aggregation of records at any geographic level is very important. If addresses exist in the database, they can be geocoded and any level of spatial aggregation is possible. Individual-level data can be aggregated into census blocks and tracts, community or neighborhood areas. Geographic information also provides an additional piece of information for linking an individual's records across multiple databases.

IMPROVING ADMINISTRATIVE DATA

Universal health care may be a tremendous opportunity for the development of better indicators of child well-being. Assuming that a common health care management information system would had been developed, such an MIS would provide an important basis for health and mental health indicators as well as being a major source for an administrative census (Riche, 1994). However, the creation of such an MIS is certainly not yet a sure thing, given the political situation of today.

We are certainly not going to improve indicators of child well-being using administrative data until it is used more by researchers. This requires that researchers have easier access and that more uniform procedures be developed to provide this access. Researchers are too often intimidated (and often rightly so!) by the bureaucratic or legal process required to acquire administrative data even when it is legally possible.

There are very few cases in which administrative data have been prepared for release for research or indicator developing (U.S. DHHS, 1991; Lurie, 1990; Iezzoni, et al.; 1992). Health care data sets comprise a large fraction of these cases. However, accessing AFDC (other than the federal QC sample), child welfare, Medicaid, court, education and other human service agency data usually requires the investigator to approach the agency and make a special request. The requirements for and restrictions to access vary by the jurisdiction and the particular dataset and are governed by state and local law. Researchers typically have to enter into lengthy negotiations with agencies that are certainly a disincentive to the use of administrative data.

Certainly, strong privacy protections are needed in order to improve the access to researchers. A set of mechanisms, procedures, or organizations should exist that can simplify access, link files where it would be productive, and create anonymous files that do not have identifiers (Hunter, 1994). Data archives or repositories on children and families or sub-areas would greatly facilitate the development of better indicators (Roos, et al., 1993).

Administrative data will not improve until information systems that are more responsive to the needs of workers are implemented. The mainframe terminal technology, in comparison to "Windows," GUI, point and click, as well as better designed relational databases, has often been intimidating to workers and has discouraged them from using the data that they regularly provide to the information system.

Much of the discussion around linking databases and privacy have centered around the use of a unique identifier used in all administrative data. There are currently severe limitations around state and local government using the Social Security Number for such a purpose. However, the SSN is not the answer. Multiple pieces of identifying information are needed in order to properly match records (Newcombe 1988; Jaro 1989). A mechanism that would provide reliably linked, sterilized files to researchers or government agencies would be a major step in ending the ongoing discussion of a unique identifier, though there would still be an issue around the use of linked data for service providing purposes (Soler, Shotten and Bell; 1993).

Common uniform coding schemes would also assist in better manipulation of administrative data. National reporting requirements have only partially addressed this. Common birth certificate forms, initiated and implemented by the Public Health Service, are one model. The Administration for Children and Families at the U.S. Department of Health and Human Services has taken a step in that direction with NCANDS and the Adoption and Foster Care Reporting System (AFCARS) in requiring that states provide their data in a particular format.

Better administrative data will be available when the storage of historical data is more uniform. Many states currently archive or even delete data when it becomes a certain age. If a client has not been a client for a number of years, their data disappears off of the on-line system and may disappear altogether. Longitudinal data is critical for the development of better outcome indicators. Maintaining longitudinal files is one way in which the expense of longitudinal surveys, currently the primary tool for longitudinal analysis, can be avoided.

MAKING ADMINISTRATIVE DATA A BETTER SOURCE OF INDICATORS FOR CHILDREN

Responsibility for better indicators rests at all levels. It is, however, incumbent on those who require them, or who might use them if they were available, to help those who produce the data and the indicators to communicate what is useful and what is not.

Federal government leadership is certainly needed in order to improve both the collection and the analysis of administrative data. Some of the initiatives discussed in this paper are an excellent beginning, but more effort in more areas would certainly allow us to better evaluate whether administrative data is a good or mediocre source of indicator development. The development of a common standard setting protocol for each area would be an excellent start, and could be followed by each area implementing that protocol. There has been a great deal of work by private and public organizations in the development of outcome indicators that could be incorporated into the development of new information systems that are being initiated by the federal government.

Including researchers in the development of information systems would greatly improve the utility of administrative data for research and statistical purposes. Many of the definitions of fields and form and structure of the data could be improved before information systems are implemented and before data has to be cleaned and manipulated in order to get basis indicators.

The legal protections against using administrative data for research purposes must be combated. Class action suits by the ACLU and other advocacy groups, while protecting clients, have resulted in agencies being less willing to provide data to qualified researchers. Having state child and family statistical centers may help in addressing this issue. This also may help offset the potential high costs of transforming administrative data into "research-ready" datasets.

Finally, researchers have a responsibility to make the indicators they develop from administrative data understandable to the audience of professionals in each of the disciplines that are concerned with the social policy addressing children and families. Indicators that are "professional-friendly" must be disseminated to larger audiences in order for the providers of the data to understand the significance of collecting the data.

REFERENCES

Banister, Judith. FDCH Congressional Testimony, August 2, 1994.

Coleman, J. S. *Longitudinal data analysis*. New York: Basic Books. 1981.

Federal Committee on Statistical Methodology, Report on Statistical uses of Administrative Records. U.S. Department of Commerce 1981.

Goerge, R.M. "Effect of Public Child Welfare Worker Characteristics & Turnover on Discharge from Foster Care." Child Welfare Research Review Annual, 1994, Ch. 9.

Goerge, R.M., B. J Lee., T. E. Sommer and J. Van Voorhis. "The Point-in-Time Multiple Service Use of Children and Adolescents in Illinois", The Chapin Hall Center for Children at the University of Chicago. July, 1993.

Goerge, R.M., J. Van Voorhis , S. Grant, K. Casey and M. Robinson. "Special Education Experiences of Foster Children: An Empirical Study". Chapin Hall Center for Children at the University of Chicago 1991.

Goerge R.M., F.H. Wulczyn, and A.W. Harden. "A Report from the Multistate Foster Care Data Archive: Foster Care Dynamics, 1983-1992", The Chapin Hall Center for Children at the University of Chicago. 1994.

Hunter, N.D., Deputy General Counsel, Dept. of Health and Human Services Senate Judiciary/Technology and the Law High Tech Privacy Issues in Health Care. Congressional Testimony January 27, 1994. Federal Document Clearing House, Inc. (Copyright 1994) U.S. Dept. HHS. Section: Vol. 109 ; No. 1; Pg. 26; ISSN: 0033-3549.

Hunter, N.D. FDCH Congressional Testimony, May 6, 1994.

Hutchison, D., "School effectiveness studies using administrative data.." Educational Research 1993;35:27-47.

Iezzoni, L., "Using administrative diagnostic data to assess the quality of hospital care." Inter j of Tech Assess in Health Care 1990;6:272-281.

Iezzoni, L., Foley, S., Heeren, T., Daley, J., Duncan, C., Fisher, E., Hughes, J., "A method for screening the quality of hospital care using administrative data: Preliminary validation results." QRB November 1992:361-371.

Jaro, M. A. "Advances in record-linkage methodology as applied to matching the 1985 census of Tampa, Florida." Journal of the American Statistical Association 84:406 (June) 1989., 414-420.

Kliss, B., and Alvey, W., Statistical Uses of Administrative Records: Recent Research and Present Prospects. Vol 1. Dept of the Treasury, Internal Revenue Service, Statistics of Income Division. Washington, D.C., March 1984.

Knitzer, J., Steinberg, Z., and Fleisch, B., At the Schoolhouse Door: An Examination of Program and Policies for Children with Behavioral Problems. Bank Street College. 1990.

Larson, O., Doris, J., Alvarez, W., "Migrants and maltreatment: Comparative evidence from central register data." Child Abuse & Neglect 1990;14:375-385.

Leginski, W., Croze, C., Driggers, J., Dumpman, S., Geertsen, D., Kamis-Gould, E., Namerow, M., Patton, R., Wilson, N., Wurster, C.. Series FN No. 10, "Data Standards for Mental Health Decision Support Systems" 1989. National Institute of Mental Health, DHHS Pub No (ADM)89-1589.Washington, D.C.: U.S. Govt. Printing Office.

Lurie, N., "Administrative data and outcomes research." Medical Care 1990; 28: 867869.

Mason, M., Gibbs, J., "Patterns of Adolescent Psychiatric Hospital: Implications for Social Policy." American Journal of Orthopsychiatry 1992;62:447-457.

Mugford, Miranda ; Banfield, Philip ; O'Hanlon, Moira "Effects of feedback of information on clinical practice: a review." British Medical Journal, Vol. 303 ; No. 6799 ; Pg. 398, August 17, 1991.

Newcombe, H. B. Handbook of record linkage: Methods for health and statistical studies, administration, and business. Oxford: Oxford University Press. 1988.

Riche, M., "What health reform might mean for demographers." Population Today January 1994:3.

Roos, L., Mustard, C., Nicol, J., McLerran, D., Comm, B., Malenka, D., Young, T., Cohen, M., "Registries and administrative data: Organization and accuracy." Medical Care 1993;31:201-212.

Scahill, L., Riddle, M., "Psychiatrically hospitalized children: A critical review." The Yale Journal of Biology and Medicine 1990:63:301-312.

Soler, M., A. Shotton, and J. Bell. "Glass walls: Confidentiality restrictions and interagency collaboration". San Francisco: Youth Law Center. 1993.

Tuma, N.B. and Hannan, M.T. Social dynamics: Models and methods. Orlando, FL: Academic Press. 1984.

U.S. Department of Education, Office of Special Education and Rehabilitative Services; *Eighth Annual Report to Congress on the Implementation of the Education of the Handicapped Act* 1986.

U.S. Department of Health and Human Services. "The feasibility of linking research-related data bases to federal and non-federal medical administrative data bases: A report to congress." 1991.

POTENTIAL AND PROBLEMS IN DEVELOPING COMMUNITY-LEVEL INDICATORS OF CHILDREN'S WELL-BEING

Claudia J. Coulton
Professor and Co-Director

CENTER FOR URBAN POVERTY AND SOCIAL CHANGE
MANDEL SCHOOL OF APPLIED SOCIAL SCIENCES
CASE WESTERN RESERVE UNIVERSITY
CLEVELAND, OHIO 44106

October, 1994

Prepared for Conference on Indicators of Children's Well-Being, November 17-18, Rockville, Md.

POTENTIAL AND PROBLEMS IN DEVELOPING COMMUNITY-LEVEL INDICATORS OF CHILDREN'S WELL-BEING

Children and their families live within local communities and these are important units for assessing child well-being. It is indeed at the level of the local community that many of the processes that affect children transpire. Children interact with neighbors; participate in local institutions; receive social, health and educational services; develop a sense of safety and belonging; form a vision of their opportunities; know what is expected of them and what they can expect from others. Parents' implicit understanding of the importance of local community is reflected in the serious thought that many of them give to their residential choices. Yet the locational options of a significant number of families are constrained by racism, low income, insufficient information or public policy. Understanding the variation in child well-being across local communities is, thus, a crucial component of policy analysis, program planning or service delivery.

Developing indicators of child well-being at the local community level, however, poses numerous conceptual, methodological and practical challenges. These are the focus of this paper as well as the important benefits of undertaking this level of measurement.

LOCAL COMMUNITIES AS UNITS OF ANALYSIS

Although the term community is a social rather than a geographic unit, the discussion in this paper will be limited to local communities that are bounded spatially. Such communities can serve as units for the measurement of child well-being. The local community of interest is typically the neighborhood, although for some purposes it is a political jurisdiction such as a ward or town, or a service delivery zone such as a school or health district.

Neighborhood boundaries are often difficult to draw because there is little consensus about what constitutes a neighborhood. Social scientists hold varying perspectives on the degree to which the term implies homogeneity, social interaction and place identity on the part of the residents (White, 1987). Most definitions of neighborhood imply a degree of social cohesion that results from shared institutions and space, but it is also widely accepted that neighborhoods differ in their levels of community social organization and integration (Lyon, 1987). Further, it seems that neighborhoods that are least cohesive and organized may be the poorest community environments for rearing children (Coulton, et al., forthcoming; Garbarino & Sherman, 1980; Sampson, 1992).

Despite the definitional ambiguities of neighborhood or other meaningful localities, local community indicators typically require geographic boundaries. These boundaries may be phenomenological, interactional, statistical or political.

At the phenomenological level, each resident has a sense of the boundaries that are personally meaningful. These vary even for the same individual depending upon the context (Galster, 1986). However, under some circumstances it is possible to use the consensus of residents as the basis for drawing geographic boundaries for neighborhoods. In our research on Cleveland's neighborhoods we have found some areas where there is considerable agreement among neighbors on the boundaries of their neighborhood while in other locales neighborhood boundaries seem virtually idiosyncratic. Consensus seems to be greater in areas with higher levels of community identity and attachment (Korbin & Coulton, 1994). Where adequate consensus exists, the residents' perceived boundaries can be used to form units for the development of indicators. However, this consensus may change over time making consensual boundaries problematic for tracking changes in communities over time.

A second approach to generating community area boundaries is to use the patterns of social interaction of residents. This involves a process of "mapping locally-based social interaction onto a spatial grid" (Entwisle, 1991). Friendship patterns and daily activities have both been used as methods of tieing interaction patterns to spatial locations.

Statistical definitions of local community areas are a third approach. Census tracts have been most widely used to date in local indicator development even though concerns have been raised about the degree to which these units resemble the space that is meaningful to residents (Tienda, 1991). Nevertheless, census tracts have proven quite useful for local planning and research on neighborhoods (White, 1987; Kasarda, 1993; Galster & Mincey, 1993; Pandey & Coulton, 1994). Block groups have also served as proxies for neighborhoods in some studies (Taylor, et al. 1984).

There is also a tradition in cities such as Chicago, Cleveland, Philadelphia and elsewhere for designated neighborhoods to be used for planning purposes and such local designations have been supported by the Census Bureau as well. Unlike census tracts, these designated neighborhoods can vary considerably in size but take into account local sentiments on natural boundaries. Although designated neighborhoods do not always match resident perceptions, they have been used successfully in research (e.g., Galster & Hesser, 1982).

Political units such as wards, districts and towns are a fourth approach to defining community areas but they can seldom be equated to neighborhoods and lack a social meaning. Nevertheless, when community indicators are used for planning or evaluation, political units may be appropriate for analysis.

Choosing a set of geographic boundaries for community indicators depends upon several considerations. First, it is important that the unit be constant over time so that trends can be tracked. Second, it must be possible to allocate available data to the unit of analysis that is chosen. Third, the choice of units should be appropriate given the assumptions and purposes underlying the set of indicators. In this regard, varying conceptual perspectives on community indicators are discussed in the next section.

In the remainder of this paper I will use the term community area to refer to the unit of geography that has been chosen be it a census tract, neighborhood or town. I will use the term community indicator to refer to measures that are made on these units of geography.

PERSPECTIVES ON COMMUNITY-LEVEL MEASUREMENT

Two quite different perspectives can be taken on community indicators for families and children. One I will label *outcome orientation*, the other *contextual orientation*. The *outcome orientation* views community areas as valuable units for measuring the status of children on various social, health and developmental outcomes. Comparing the status of children across community areas can reveal inequalities that suggest levels of need and indicate where resources should be targeted. These comparisons also can point to differences in program effectiveness or practices across community areas. These are the purposes for which community indicators are often obtained and outcomes do indeed vary considerably across community areas within counties or metropolitan areas (Coulton & Pandey, 1992).

This *outcome orientation* makes few assumptions about the relationships between community areas and their families and children. The outcome measures represent the status of a population of children who live in specified local areas. The ways in which the local communities themselves affect these outcomes remain unspecified.

An alternative view of communities, though, is to measure them as environments for families and children. This *contextual orientation* is based on the assumption, for which there is some empirical support, that community areas (e.g., neighborhoods) can affect children and their families positively or negatively. Some of these effects are reflected in higher or lower rates of health, social and developmental outcomes. But from this perspective it is the community structure and processes that are the relevant focus of measurement.

The *contextual orientation* makes some strong assumptions about how communities affect families and children. I have reviewed the several extant lines of research on the effects of neighborhoods on families and children in another paper (Coulton, 1994) but I will summarize them here. For convenience, this summary discusses the research under four broad headings that are not mutually exclusive: Compositional effects, community context of effective parenting, effects of stressful neighborhood environments, and community social organization.

First, recent interest in extreme poverty neighborhoods has spawned a series of studies designed to determine whether neighborhood socioeconomic composition affects life chances of children over and above family background factors. Although not adopting any uniform theoretical perspective, these studies can be loosely classified as subscribing to a model of socialization processes within neighborhoods through adult, peer, or institutional influences (Jencks & Mayer, 1990). Research on the socioeconomic composition of communities reveals that having sufficient affluent families in a neighborhood promotes school achievement, cognitive development, and the avoidance of teen childbearing (Brooks-Gunn et al., 1993; Clark, 1992; Crane, 1991; Duncan, 1993). The positive effects of middle-class and affluent neighbors has been found by these studies to be more important as a context for children than the negative effects of having poor neighbors.

Second, the community context for parenting has been explored in several important studies. These studies shed light on how social networks, resources, local institutions, and environmental stressors shape parenting style. Parents adapt to dangerous and depleted environments by restricting their children's activities and isolating themselves from the surrounding area (Furstenberg, 1993). These adaptations while understandable and necessary for safety may not promote academic achievement and future economic success. Also, individual parents who adopt effective child rearing styles will not be as successful when they are surrounded by less effective parents. The distribution of effective parents differs across types of communities (Steinberg et al., 1992; Steinberg & Darling, 1994).

Third, the negative effects on families and children of stressful conditions in poor, urban environments have been explored in many studies. Getting most attention in recent years has been the negative impact of chronic exposure to violence in the community (Martinez & Richters, 1993; Garbarino, et al., 1992; Zapata, et al., 1992). Daily hassles, though less dramatic, have been found to be a significant cause of parental distress in poor neighborhoods, too (Caspi et al., 1987; Garbarino & Sherman, 1980). Considerable work on how resourceful parents adapt to these stressful conditions is contained in this line of research as well. Kinship networks and neighbors are used quite effectively by some parents (Lee et al., 1991; McAdoo, 1986). For others, network relationships can actually be a further source of strain (Riley & Eckenrode, 1986).

Fourth, community social organization is proving to be a useful framework for understanding the relationship between macro-structural change and the experience of families and children within neighborhoods (Sampson, 1992). As neighborhoods decline economically, experience population turnover and contain large numbers of children in female-headed families, the community's internal control is diminished. Studies of crime and delinquency, in particular, support the contention that this occurs through the effects of the macro-structure on processes within the community such as friendship networks, institutional participation, normative consensus, and monitoring of the environment (Bursik & Grasmick, 1993; Sampson & Groves, 1989; Sampson, 1991). Dimensions of community structure such as economic resources, residential mobility, family structure and age distribution of the population have been linked to varied childhood outcomes including child maltreatment, delinquency, teen childbearing and low-birthweight rates (Coulton, et al., forthcoming).

Regardless of whether an *outcome orientation* or *contextual orientation* is chosen, caution must be exercised in interpreting differences among communities. Community selection processes are complex and difficult to isolate but can be important explanations for variation among local areas (Tienda, 1991). On one hand, self-selection of families into particular communities and forced selection of communities by families due to discrimination, affordability or public policy may be responsible for variation in outcomes or community context. On the other hand, pre-existing differences in social, economic and institutional structures and processes can affect children within communities regardless of the selection processes that led to their presence in a particular community in the first place.

Even with these caveats in mind, community area boundaries need to be consistent with the orientation that is chosen. The *outcome* and *contextual orientation* also call for somewhat different types of indicators to represent the well-being of children in communities. Examples of such indicators are provided in the next section.

COMMUNITY INDICATORS OF CHILDREN'S WELL-BEING

Community indicators are measures of child and family well-being tied to local community areas. Indicators that reflect an *outcome orientation* include social, health and developmental outcomes for the population living in local areas. Indicators that reflect a contextual orientation include measures of the community structure and process that are believed to affect children and family life.

Neighborhoods and other community areas can change rapidly. Thus, community indicators from either orientation should be calculated and available annually or bi-annually.

Outcome Indicators

Outcome indicators that are useful at the community level include many of those that have been proposed for use at the national and state level. I will not repeat the conceptual justification for their use since this will undoubtedly be covered in other papers. However, data sources and availability differ at the community level placing limitations on what is practical. In particular, large scale surveys seldom have sufficient sample size to make estimates for small areas. Furthermore, the base rates of some outcomes useful at the state or national level will be too low to allow valid measurement at the local community area level.

Table 1 offers a list of indicators that we have used in Cleveland's neighborhoods and the surrounding metropolitan area as an illustration of what is currently possible. This is not an exhaustive list. The indicators are organized according to the general categories suggested by Zill (1991). Our system in Cleveland allows calculation of the indicators for block groups, census tracts, neighborhoods officially designated as planning areas, or any other subareas of the County that can be aggregated from block groups such as areas defined by residents or neighborhood leaders. This type of flexibility is highly desirable in local indicator work.

Measures of health and safety of children are the types of outcomes most readily available at the local level. Local health departments, hospitals, police jurisdictions, child welfare agencies and coroners are all potential collaborators for developing indicators in this area. Infant death rates and low birthweight rates and other measures of infant and child health can be calculated from birth and death certificates which are readily available and can be geo-coded for aggregation into small areas. Rates from year-to-year are quite labile in small areas and three-year averages are preferred.

Child maltreatment rates can be calculated from official reports and are reasonably comparable in terms of definitions and criteria within one agency jurisdiction. However, over and underreporting biases may differ across community areas and must be assessed carefully (see later section on reporting bias).

Trauma rates can be calculated for children if trauma registries exist in the emergency departments of most major hospitals serving the communities of interest. We are currently in the planning stages for such a registry system for Cleveland. The trauma events will be geo-coded using the home address of the patient and aggregated by age to yield rates for children. A seriousness threshold for inclusion in this indicator will need to be developed.

Child homicide rates and suicide rates as well as gun-related deaths for community areas can be calculated from the coroner's data. Because these are rare events, multiple years need to be averaged and rather large community areas must be used for analysis.

Measures of what Zill (1991) labels moral and social development and emotional development are more difficult to obtain at the local level without resorting to impractical neighborhood surveys. One useful measure, though, is the teen childbearing rate which is based on births to teens per 1,000 females ages 12-17.

The delinquency rate is another possible indicator of moral and social development and is derived from court records which are classified as to level of offense and age of offender and then geo-coded. Delinquency filings are counted per 1,000 males and females ages 10-17. Further refinements of this indicator can include separate rates for males and females, separate rates for violent offenses and direct age standardization.

Teen drug violation arrest rates are also available and can be calculated from arrest records of the police departments. Caution must be exercised when comparing these rates across police precincts or municipalities because police practices may differ. While these rates do suggest the communities in which drug activities result in youth interacting with the criminal justice system, they cannot be used as valid measures of drug use or involvement as a whole.

Measures of cognitive development and academic achievement can be developed for communities in collaboration with local school systems. High school graduation rates require student-level data from the schools that is geo-coded so students can be assigned to neighborhoods. If multiple years of data files are available, counts of students entering the 9th grade in each community area are divided into counts of students graduating four years later. Student performance is measured as the mean grade level achieved by students at selected grade levels on standardized achievement tests.

These school-based measures are more practical in neighborhoods where most of the children attend public schools. We have found some neighborhoods in Cleveland, though, with fewer than 50% of the children enrolled in public schools. A valid school completion indicator for these areas would require obtaining student data with home addresses from more than 30 private and parochial schools, all of whom have differing methods of data collection and storage. This task has been impractical thus far.

Youth employment can also be considered an indicator of achievement. It uses the decennial census to calculate the labor force status of young men and women, 16-25, who are not in school. Unfortunately, we have not yet found a measure of youth employment at the community level that is available more frequently than each decade. However, the use of the State reporting system related to unemployment compensation is being explored.

The economic status of families, a final category suggested by Zill (1991), is available at the community level from the decennial census. Family poverty rate, child poverty rate and family median income can all be calculated easily. However, we know that the actual economic status of families in a neighborhood can change rapidly during a decade. Therefore, we are developing a model for estimating these rates in each subsequent year using variables derived from AFDC and food stamp recipients in each community area. Our previous experience in estimating overall poverty rates for census tracts between 1980 and 1990 showed fairly high accuracy. Public assistance counts for various programs were benchmarked to census counts of poor persons and the model was used as an estimator in intercensal years.

Child public assistance rate is an additional indicator of the economic status of families that is available yearly. Public assistance families typically have income that is well below the poverty threshold. This indicator reflects, therefore, the children with the most extreme economic deprivation. It can be calculated using the monthly average caseload of children receiving public assistance in each community area divided by the number of children living in the area. The monthly public assistance case files are geo-coded and counts are produced for the desired units of geography.

Contextual Indicators

The search for practical measures of community environments has an extended history (Rossi, 1970). However, the identification of indicators of community context that may be important factors in the well-being of children requires either scientific research or a set of assumptions that link aspects of community structure and process to effects on families and children. Unfortunately, research that pinpoints those aspects of community that affect children and families has yet to yield definitive connections. Nevertheless, the research described in the section on perspectives can be used to suggest a set of indicators of community context that are worthy of experimentation.

Table 2 presents a set of indicators of community context for children that we have been exploring in Cleveland's neighborhoods. At the aggregate level, they have been linked to rates of child maltreatment, teen childbearing, low birthweight and delinquency (Coulton et al., forthcoming). Ethnographies conducted in selected neighborhoods representing varying levels of risk for children generally confirm that these factors coincide with residents perceptions of the neighborhood as "good or bad places for raising children" (Korbin & Coulton, 1994). The data sources for these contextual indicators are much more limited at the community level than they are for the outcome types of indicators. Since many come from the decennial census they only are available at 10-year intervals.

Economic status of neighbors is suggested as an important contextual indicator for the well-being of children both in the compositional effects and the community social organization research. The compositional research, though, emphasizes that measurement needs to reflect not only overall economic status such as median income or poverty rate but must also include an indicator of the presence of middle class or affluent neighbors (Brooks-Gunn et al., 1993; Clark, 1992; Crane, 1991; Duncan, 1993).

The importance of the age and family structure of a community is also implicated as an important factor in the well-being of children. Specifically, community areas with a higher percentage of elderly persons, a more equal ratio of men to women, a greater percentage of two-parent families and a more favorable adult-child ratio are found to correlate with lower rates of poor outcomes and to be perceived by residents as promoting a better environment for children (Coulton, et al. forthcoming; Korbin & Coulton, 1994).

Several indicators of residential mobility are deemed important because population turnover has been repeatedly connected to aspects of community process (Freudenburg, 1986). Most important as a context for children is the negative effect of residential mobility on parent-to-parent networks and support for institutions serving children.

Indicators of environmental stress are potentially useful because they may directly affect parents' ability to protect and nurture their children and because of the negative effects of these factors on community social organization. Substandard and abandoned housing is associated with growing disorder and fear of crime (Skogan, 1990). High levels of personal crime and drug selling are seen by residents as a source of anxiety and distraction that affects their parenting (Furstenberg, 1993; Korbin & Coulton, 1994).

On the positive side, some contextual supports for effective parenting are also suggested. Parental involvement with social institutions, neighbor-to-neighbor relations, and community resources for families are but a few of the important features of community that seem important (Zill & Nord, 1994; Garbarino & Sherman, 1980). Unfortunately, few data sources are readily available for measuring resources at the local community level. Community resources for children have been studied in national and local surveys, but surveys are seldom practical for local indicators. New sources of data need to be developed to measure these aspects of community context.

METHODOLOGICAL CONSIDERATIONS FOR COMMUNITY-LEVEL INDICATORS

There are numerous methodological problems pertinent to making measurements of child and family well-being for small geographic areas such as communities. I will not repeat many of the general issues in measuring child well-being because they are covered in other papers in this conference.

Assignment of Geographical Location

Because definitions of community areas typically have some geographic boundaries, data used for community indicators must be suitable for assignment to geographic units. Administrative agency data, which is often the preferred source for local community indicators, must be obtained with the street addresses intact. The addresses can be geo-coded using the TIGER files and aggregated to the desired geographic boundaries (e.g., block groups, census tracts, resident-defined neighborhoods, wards, catchment areas, school zones, etc.)

In our experience, agencies differ considerably in the accuracy and validity of their addresses for this purpose. Problems include the timeliness of the address, whether it is verified or not, and administrative conventions that can be misleading. For example, some agencies overwrite addresses when there is a move so the address is the most current one. This may differ from the address at which an event of interest occurred, such as an arrest or a child abuse incident. Also, the address given may not be a home address, which is usually the one desired for community analysis, but an office or agency where a service was delivered. Finally, when the address is obtained by the agency for informational rather than service delivery purposes, accuracy may be low and a substantial number of addresses may not be codable without considerable effort expended in correction of errors.

Finally, for some indicators, there may be ambiguity as to which geographic area to assign a case. For example, infant deaths are ordinarily assigned to the community area in which the death occurred. However, since infant death is highly related to conditions in the prenatal period, it may be more useful to assign the death to the community area in which the birth occurred.

Small Area Limitations

The geographic units for community indicators are typically fairly small. Block groups vary considerably in their population size but may have anywhere from just a few to hundreds of housing units. While census tracts have an average population of 4,000, many are quite a bit smaller especially in central cities that have been losing population. Designated neighborhoods can be of any size depending on the methodology used for drawing the boundaries. This small geography poses several limitations.

First, is the unavailability of survey data. There are no national surveys with sample sizes that are adequate to provide valid estimates for small areas such as neighborhoods and census tracts. Even statewide or metropolitan-wide surveys are seldom adequate for these purposes. Only the decennial census in which 15% of the households complete the long-form provides some estimates of family structure and economic status that can be used for small geographic areas. The Public Use Microdata (PUMS) 5% sample from the census can be used to make estimates at the sub-city level, but these areas of 100,000 minimum population seldom correspond to any meaningful definition of community area.

Surveys are periodically undertaken locally that are capable of generating measures of child and family well-being for small, geographically defined communities. However, it is seldom feasible to draw adequate size samples for all neighborhoods in a region so a multistage sampling method may be used. Thus, these surveys do not provide measures for all community areas but only for a sample, selected randomly or otherwise. Furthermore, these expensive surveys are seldom repeated and so they do not yield measures over time which is desirable for indicators.

Low base rates is a second problem with small area analysis. Outcomes of significant interest such as childhood deaths from trauma can show extreme variation in rates because they are rare. Since aggregating geography to achieve sufficient population size would often negate the purpose of community area analysis, multi-year averages must be used to obtain a stable trend. The disadvantage, of course, is that important changes in conditions may be obscured in the short run.

A third problem is the fact that meaningful geographic units often have markedly unequal population sizes. The stability or reliability of an indicator will be better in larger areas than in smaller areas. An extreme rate in a smaller area must be viewed with considerable caution. For some purposes, such as statistical modeling, the geographic units can be weighted for their population size, but such weighting does not typically make sense when the indicators are being used for local planning or policy purposes.

Reporting Bias and Error

Although error and bias must be considered in all work on indicators, there are two problems that are particularly troubling at the local community level. First, because local community indicators rely so heavily on administrative agency data they are beset by the reporting bias and error in those data sources. The nature of these problems are likely to vary from one indicator to another. Birth and death certificates, for example, are known to be quite complete. However, causes of death on death certificates or information about the mothers' health contained in birth certificates are prone to error. These errors differ depending upon the hospitals and physicians involved in their completion. Thus, the degree of error will differ in an unknown way across community areas.

Reports of criminal or deviant acts are subject to the most severe and troubling sorts of bias. Police reports and court records are known to underestimate the true levels of criminal and violent events (O'Brien, 1985). More importantly, they are also biased by differences that may exist across jurisdictions in victims' or observers' tendencies to report (Sampson, 1985) and government officials' tendency to file reports and take action (Sherman, 1989; O'Toole et al., 1983). Unfortunately, the direction of the bias in each of the community areas cannot be known but could account for some part of the observed differences.

The problem of errors and bias in administrative records requires careful investigation in each instance. Few generalizations can be made across regions. Generally, though, errors will be fewer when the data element used serves a mandated function or vital purpose of the agency. Information gathered by the agency for descriptive purposes only can often be misleading due to large amounts of missing data or coding errors. Reporting bias is particularly troubling when the direction of the bias is not the same in all community areas.

It is desirable, therefore, that efforts be made to validate widely used indicators based on administrative records against other data sources. Specially designed community surveys can be useful for establishing the validity of indicators derived from administrative agencies or other sources. For example, Jill Korbin and I have a study in the planning stage that will use a survey instrument to measure aspects of child abuse and neglect. The survey will be conducted in a random sample of neighborhoods whose rates of child abuse and neglect have been calculated based on official reports to the County authorities. These two sources of data can be compared to illuminate the issue of reporting bias and error in both the survey and administrative agencies.

Another example of validating administrative data with another source are the infant mortality reviews that are being carried out as a part of Cleveland's Healthy Start Program and are being performed in other Healthy Start cities. In Cleveland, the infant mortality review has revealed considerable variation across hospitals and physicians in classifying causes of death and in deciding what is a live birth. When corrected, the quality of this source of administrative data will be improved.

An additional issue that is pertinent to local community indicators is the amount of undercounting and missing data. This problem has received considerable attention with respect to the decennial census. Most troubling for community indicators is that the amount of undercounting and missing data are not uniform across community areas. Census counts are more likely to be undercounts when they pertain to young men and minorities in central city neighborhoods, for example. Furthermore, the amount of missing data that the census bureau imputes is greater in low-income, minority neighborhoods leading to differential reliability of census indicators (White, 1987). Adjusting for the estimated undercount in some neighborhoods may be necessary but also introduces another source of error since the true undercount cannot be known in each location.

Small Area Population Estimates

Community indicators are often reported as rates in which the areas' population is used as the denominator. Rates may be reported per 100, 1,000 or 100,000 persons. Unfortunately, population estimates are not universally available at the block group or census tract level between censuses, so rates in non-censual years will be less valid. While established methods of population estimation are used at state and county levels, their application to areas as small as block groups, census tracts or neighborhoods has not been widespread (Heeringa, 1982).

Nevertheless, the sources of data needed to perform these population estimates can generally be obtained for community areas through geo-coding. The housing unit method of population estimates, for instance, can use building and demolition permits, utility hookups and disconnections or county assessor tax records to update housing unit counts post-censally. The component-cohort method relies on birth and death certificates. While estimating small sized areas results in greater error, there is evidence that useful estimates are possible (Smith & Cody, 1994).

The ability to develop indicators for community areas would be greatly enhanced if the Census Bureau were to assist local communities in efforts to estimate small area population. Federal involvement could bring uniformity across metropolitan areas in the methodologies that are used and allow the development of data sources that are national rather than local. For example, the address registries of the postal service have a level of national standardization that local utility companies, housing departments and county assessors do not. If such a registry could be linked with census geography, significant intermetropolitan sources of variation could be reduced.

Standardization

Community-level indicators are applied to areas of widely differing demographic makeup. In some instances, therefore, it may be useful to apply age or gender standardization. Small geographic areas often display marked variability in age and gender distribution. Some childhood indicators are sensitive to the particular age distribution that is present in the community. For example, teen births are concentrated in older teens and occur with less frequency in younger teens. Therefore, if two communities have a similar number of teens but the teens in one community tend to be older, the community with older teens would be expected to have a higher teen birthrate. Age standardization can compensate for differing age distributions and is probably worth the extra computational steps when children's ages put them at greater or lesser risk for particular outcomes.

There are also indicators that may be sensitive to gender distribution in the community. For example, delinquent behavior is known to be more frequent among boys. Gender-specific rates should be calculated for these types of indicators.

Other forms of statistical adjustment have been suggested for indicators, such as adjusting outcome indicators for the economic status or ethnicity of the population (Zill, 1991). In general, risk adjustment would not seem to be justified in community-level analyses. Such adjustment would obscure important ways in which communities that are more affluent differ from those that are lower income or ways in which some communities may be favored over others in resource distribution.

An exception to this general discouragement of risk adjustment would be the situation where community indicators are being used for program evaluation. Known risk factors for a particular outcome that are not amenable to the effects of the intervention would be suitable factors to use in adjustment. For example, mothers' age, ethnicity and educational attainment are known risk factors for infant mortality. Community area rates of infant mortality could be adjusted for these factors in an evaluation of an infant mortality prevention program.

ANALYSIS AND INTERPRETATION OF COMMUNITY-LEVEL INDICATORS

The analysis of community indicators can take several forms. First, each community or area can be examined over time to determine the amount and direction of change in each indicator. When areas are small, multi-year averages must be used and a fairly long-time trend is needed to detect significant variation. Nevertheless, for practical purposes neighborhood residents and organizations are often interested in monitoring these types of trends.

Second, community areas can be compared with one another cross-sectionally on each indicator. Areas can be ranked on selected indicators and maps can be used to determine the location of communities that are relatively high and relatively low on the various indicators. Cross-sectional analyses of this type are often useful for planning purposes such as choosing locations for programs or deciding where to target resources. Also, they allow areas that are performing poorly to identify areas that are performing better and seek their advice and assistance for improvement. These cross-sectional comparisons must be made cautiously, though, due to differences in reporting biases and an expected amount of random variation at any given period in time.

Third, community areas can be grouped according to their similarities on a set of indicators. Such clusters can aid community leaders in recognizing the interrelationships among several aspects of children's well-being. The recognition that several troubling outcomes or conditions are concentrated in a few areas can lead to greater collaboration and service integration. Maps that allow overlaying of several indicators can be powerful visual aids in this process and promote community approaches to problem solving.

Fourth, panel studies of change in multiple indicators across multiple community areas are possible (Pandey & Coulton, 1994). Such analyses can suggest the degree to which change in an indicator leads or lags change in other indicators. This knowledge can allow communities to anticipate improvement or deterioration and react accordingly.

Finally, indices that capture the metropolitan-wide distribution of community indicators are quite useful. For example, an important concern today is that poor children and their families are often isolated from the rest of the population in inner city enclaves and this concentration of families at risk is particularly detrimental (Wilson, 1987). A commonly used method of determining this level of concentration is to establish a threshold that is considered detrimental. With respect to poverty, census tracts with poverty rates of 40% or more are considered extreme poverty areas (Kasarda, 1993). A resulting index of concentration pertinent to child well-being is the percentage of all children in a county or metropolitan area who live in these extreme poverty neighborhoods.

Another method of determining the local distribution of child well-being is to calculate an index of dissimilarity (D) (Lieberson, 1980) for selected child outcomes. For example, the degree to which low birthweight babies are segregated from babies whose weights are in normal range could be calculated for a metropolitan area. The D index varies from 0 to 1 and represents the proportion of those babies who would have to be moved to achieve an even distribution of low birthweight babies throughout the metropolitan area. It reveals the amount of segregation of childhood outcomes within the metropolitan area.

COMMUNITY INVOLVEMENT AND DISSEMINATION OF INDICATORS

Perhaps more than at any other level, the development of community indicators requires involvement of local residents and leaders. They need to be involved in designating the appropriate geographic units to be studied as well as setting priorities regarding the types of indicators to be sought. Because of the demands of data cleaning and geo-coding, the generation of community indicators can be quite expensive and the community needs to influence the choices that are made.

Community residents and leaders also play an important role in interpreting trends and patterns that are observed in the indicators. They are aware of changes that are occurring in their communities that may account for the findings. They are also the vehicle for converting the information that indicators provide into action.

Since local and state administrative agencies are the source of much community indicator data, their involvement is essential, too. Collaborative relationships need to be established so that the agency as well as the community can benefit from the information that is generated. Data preparation may be burdensome for the agency and there are often serious concerns about the protection of confidentiality, especially since addresses are needed for geo-coding. These barriers can be overcome when all parties see the benefit of producing the information.

Getting community-level indicators into the hands of the public in a useful format is not a trivial problem, though. Because there are so many units of geography that are of potential interest, the indicators need to reside in a system that can be quickly and easily manipulated, preferably by users as well as analysts. Taking Cleveland and its suburbs as an example, there are 1,535 block groups, 495 census tracts, 35 city neighborhoods and 58 suburban municipalities. Indicators for each of these units need to be readily available.

To accommodate these hierarchically structured units of geography and over 80 indicators for a 13 year period, we have created an interactive information system that is available to community-based organizations (Chow, forthcoming). Using the system that we have named CANDO, users can generate their own geography and trend analyses for indicators of their choice. We also produce a hard copy report of selected indicators each year for one unit of geography, the 35 Cleveland neighborhoods.

A NATIONAL SYSTEM OF COMMUNITY INDICATORS

Recent advances in geographic information systems and computing networks have allowed many metropolitan areas to begin generating community area indicators. Several cities such as Cleveland, Providence, Atlanta, Chicago, Boston, Denver, and Oakland to name a few are moving toward systems that create, store and analyze relatively comprehensive sets of indicators for small geographic areas. They use a combination of census and administrative agency data and occasionally special purpose surveys and other unique data sources.

Local efforts such as these can contribute to a greater national understanding of the well-being of children in communities if they become linked together. Such linking requires considerable effort, however. A number of issues need to be addressed.

First, definitions of communities and neighborhoods need to be refined. Criteria need to be established for setting boundaries that are practical, meaningful and comparable across cities. Perhaps several different methods of aggregation will be required depending upon whether the focus is on outcomes or community context, for example.

Second, a uniform set of indicators must be defined for collection in multiple metropolitan areas. The list should be of manageable size but also capture most of the types of outcomes that are important. Some of the indicators selected should measure context as well so that variance in outcomes can be examined as a function of differences in context across metropolitan areas.

Third, administrative records from various jurisdictions must be studied to determine comparability. State and local authorities will differ in reporting requirements, classification systems and patterns of error and bias in their records. Methods of standardizing information across jurisdictions will be essential.

Finally, a common approach to estimating population at the block group or census tract level in intercensal years will be required. The method used will need to be equally valid in all regions to make the community indicators comparable. A single national data source would facilitate this, although common local data sources should also be tested.

Comparable community indicators that are provided by many states and metropolitan areas should eventually be able to inform policy debates. Many federal programs are passed through to the local level for implementation, but the outcomes currently are not available for the small areas to which the programs have been targeted. This gap could be filled by a national system of community indicators. Without community indicators, little can be known nationally about the local context in which children live and toward which national policy is directed.

CONCLUSIONS AND RECOMMENDATIONS

The ecological context of childhood includes the community as an essential feature. Indicators of children's well-being should be available for community areas, even though the mechanisms through which children are affected are only beginning to be understood. Both outcome and contextual measures are desirable. These are essential for local planning and evaluation and should be produced yearly in most instances. Community indicators also can contribute to a national understanding of children's well-being within their residential locales.

Since administrative records are often relied upon, local agencies should be encouraged to examine their databases as potential sources for valid community information. Adding geo-coding capacity to agency systems can reduce error and overcome problems of confidentiality involved with releasing actual addresses. State and national level reporting standards should be developed for administrative records so that indicators based on administrative data can become more reliable and comparable.

Consideration should also be given to designing surveys that will allow measurement at the community area level. Although surveys may be impractical for ongoing measurement, survey findings are useful for validating indicators based on other sources of data. Sampling designs in most existing surveys have insufficient respondents from any community area to allow aggregate measures of community characteristics. However, multistage samples in which households are sampled within block groups or census tracts may be adapted for this purpose and this strategy should be encouraged.

Most community indicators must be adjusted for population size. The lack of population estimates between censuses for block groups or census tracts now limit the validity and comparability of community indicators. Federal leadership is required in this area along with local community involvement. The diversity of methods and data sources that are now being used limit comparability from one state or metropolitan area to another. National data sources such as postal address files would have considerably less variability than current local sources and these methodologies should be tested.

National standards for community indicators are worthy of experimentation. This effort must be led by local communities with experience in developing their own systems of indicators. Communities would not be expected to limit their own interests to areas covered by the national standards. Yet, a national system could guarantee a minimum base of information that would be widely available. Experimentation of this sort should also move the field toward an emerging consensus regarding definitions of community and its important dimensions for child well-being.

Finally, community indicator development must be informed by research to address the complex question of how communities affect families and children. The negative and positive childhood outcomes that are now of significant policy focus are certainly fostered or prevented to some degree by resources and processes within the community. However, thus far, the scientific literature contains considerable ambiguity regarding the strength and direction of these forces. To reduce this ambiguity, it is particularly important that researchers move beyond static models of neighborhood effects towards models that are dynamic and reciprocal. A mix of quantitative and qualitative methods are needed to uncover these processes and reveal how and why communities change and influence the resident families and children. Community indicators can be refined as this understanding unfolds.

References

Brooks-Gunn, J., Duncan, G. J., Klebanov, P. K., & Sealand, N. (1993). Do neighborhoods influence child and adolescent development? American Journal of Sociology, 99, 353-395.

Bursik, R. J., & Grasmick, H. G. (1993). Neighborhoods and crime. New York: Lexington Books.

Caspi, A., Bolger, N., & Eckenrode, J. E. (1987). Linking person and context in the daily stress process. Journal of Personality and Social Psychology, 52, 184-195.

Chow, J. (forthcoming). CANDO (Cleveland Area Network for Data and Organizing) users guide. Cleveland: Case Western Reserve University, Center for Urban Poverty and Social Change.

Clark, R. (1992). Neighborhood effects on dropping out of school among teenage boys. Washington, DC.: The Urban Institute.

Coulton, C. (1994, May). Effects of neighborhoods in large cities on families and children: Implications for services. In A. Kahn & S. Kammerman (Chairs), Children and Their Families in Big Cities. Seminar held at the Columbia University School of Social Work, New York.

Coulton, C., Korbin, J., Chow, J., & Su, M. (forthcoming). Community level factors and child maltreatment rates. Child Development.

Coulton, C. J., & Pandey, S. (1992). Geographic concentration of poverty and risk to children in urban neighborhoods. American Behavioral Scientist, 35, 238-257.

Crane, J. (1991). Effects of neighborhoods on dropping out of school and teenage childbearing. In C. Jencks & P. E. Peterson (Eds.), The urban underclass, (pp. 299-320). Washington, DC: The Brookings Institution.

Duncan, G. J. (1993). Families and neighbors as sources of disadvantage in the schooling decisions of white and black adolescents. Ann Arbor: University of Michigan.

Entwisle, B. (1991). Micro-macro theoretical linkages in social demography: A commentary. In J. Huber (ed.), Macro-micro linkages in sociology (pp. 280-286). Newbury Park, CA: Sage.

Freudenburg, W. R. (1986). The density of acquaintanceship: An overlooked variable in community research. American Journal of Sociology, 92, 27-63.

Furstenberg, F. F. (1993). How families manage risk and opportunity in dangerous neighborhoods. In W. J. Wilson (Ed.), Sociology and the public agenda (pp. 231-258). Newbury Park, CA: Sage Publications.

Galster, G. C. (1986). What is neighborhood? An externality-space approach. International Journal of Urban and Regional Research, 10, 243-261.

Galster, G. C., & Hesser, G. W. (1982). The social neighborhood: An unspecified factor in homeowner maintenance? Urban Affairs Quarterly, 18, 235-254.

Galster, G. C., & Mincey, R. B. (1993). Understanding the changing fortunes of metropolitan neighborhoods: 1980 to 1990. Housing Policy Debate, 4, 303-348.

Garbarino, J., & Sherman, D. (1980). High-risk neighborhoods and high-risk families: The human ecology of child maltreatment. Child Development, 51, 188-198.

Garbarino, J., Dubrow, N., Kostelny, K., & Pardo, C. (1992). Children in danger. San Francisco: Jossey Bass.

Heeringa, S. C. (1982). Statistical models for small area estimation. Readings in Population Research Methodology, 5, 126-132.

Jencks, C., & Mayer, S. E. (1990). The social consequences of growing up in a poor neighborhood. In L. E. Lynn & M. G. H. McGeary (Eds.), Inner-city poverty in the United States (pp. 111-186). Washington, DC: National Academy Press.

Kasarda, J. (1993). Inner-city concentrated poverty and neighborhood distress: 1970 to 1990. Housing Policy Debate, 4, 253-302.

Korbin, J. E., & Coulton, C. J. (1994). Final Report: Neighborhood impact on child abuse and neglect. Washington, DC: National Center for Child Abuse and Neglect.

Lee, B. A., Campbell, K. E., & Miller, O. (1991). Racial differences in urban neighboring. Sociological Forum, 6, 525-550.

Lieberson, S. (1980). A piece of the pie: Blacks and white immigrants since 1880. Berkeley, CA: University of California Press.

Lyon, L. (1987). The community in urban society. Chicago. Dorsey Press.

Martinez, J. E., & Richters, P. (1993). The NIMH community violence project: Children's distress symptoms associated with violence exposure. Psychiatry, 56, 22-35.

McAdoo, H. P. (1986). Strategies used by black single mothers against stress. Review of Black Political Economy, 14, 153-166.

O'Brien, R. M. (1985). Crime and victimization data. Beverly Hills, CA: Sage.

O'Toole, R., Turbett, P., & Nalpeka, C. (1983). Theories, professional knowledge, and diagnosis of child abuse. In D. Finkelhor, R. Gelles, G. Hotaling & M. Strauss (Eds.), The dark side of families: Current family violence research. Newbury Park, CA: Sage Publications.

Pandey, S., & Coulton, C. J. (1994). Unraveling neighborhood change using two-wave panel analysis: A case study of Cleveland in the 80s. Social Work Research, 18, 83-96.

Riley, D., & Eckenrode, J. (1986). Social ties: Subgroup differences in costs and benefits. Journal of Personality and Social Psychology, 51, 770-778.

Rossi, P. (1970). Community social indicators. Baltimore: Johns Hopkins University.

Sampson, R. J. (1985). Neighborhood and crime: The structural determinants of personal victimization. Journal of Research in Crime and Delinquency, 22, 7-40.

Sampson, R. J. (1991). Linking the micro- and macro-level dimensions of community social organization. Social Forces, 70, 43-64.

Sampson, R. J. (1992). Family management and child development: Insights from social disorganization theory. Advances in Criminological Theory, 3.

Sampson, R. J., & Groves, W. B. (1989). Community structure and crime: Testing social-disorganization theory. American Journal of Sociology, 94, 775-802.

Sherman, L. (1989). Hot spots of predatory crime: Routine activities and the criminology of place. Criminology, 27, 27-56.

Skogan, W. G. (1990). Disorder and decline. Berkeley, CA: University of California Press.

Smith, S. K., & Cody, S. (1994). Evaluating the housing unit method. APA Journal, 60, 209-221.

Steinberg, L., & Darling, N. (1994). The broader context of social influence in adolescence. In R. Silbereisen & E. Todt (Eds.), Adolescence in context. New York: Springer.

Steinberg, L., Lamborn, S. D., Dornbush, S. M., & Darling, N. (1992). Impact of parenting practices on adolescent achievement: Authoritative parenting, school involvement and encouragement to succeed. Child Development, 63, 1266-1281.

Taylor, R. B., Gottfredson, S. D., & Brower, S. (1984). Block crime and fear: Defensible space, local social ties, and territorial functioning. Journal of Research in Crime and Delinquency, 21, 303-331.

Tienda, M. (1991). Poor people and poor places: Deciphering neighborhood effects on poverty outcomes. In J. Huber (Ed.), Macro-micro linkages in sociology (pp. 244-262). Newbury Park, CA: Sage.

White, M. (1987). American neighborhoods and residential differentiation. New York: Russell Sage Foundation.

Wilson, W. J. (1987). The truly disadvantaged: The inner city, the underclass, and public policy. Chicago: The University of Chicago Press.

Zapata, B. C., Rebolledo, A., Atalah, E., Newman, B., & King, M. C. (1992). The influence of social and political violence on the risk of pregnancy complications. American Journal of Public Health, 82, 685-690.

Zill, N. (1991). Improving KIDS COUNT: Review of an annual data book on the condition of children in the 50 states of the U.S. Washington, DC: Child Trends.

Zill, N., & Nord, C. W. (1994). Running in place: How American families are faring in a changing economy and individualistic society. Washington, DC: Child Trends.

Table 1: Examples of Community Outcome Indicators for Children Available in the Cleveland Metropolitan Area

Indicator	Measure	Data Sources
Health and Safety		
Infant Death Rate	Infant deaths/live births	Vital Registrar
Low Birthweight Rate	Births < 2500 grams/live births	Vital Registrar
Child Maltreatment Report Rate	Reports of abuse or neglect/population < 18	County Children's Services
Trauma Rate[1]	Children's injuries/population < 18	Hospital Emergency Rooms
Child Homicide Rate	Child homicides/population < 18	County Coroner
Child Suicide Rate	Child suicides/population < 18	County Coroner
Social Behavior		
Teen Childbearing Rate	Births to teens/females 12-17	Vital Registrar
Delinquency Rate	Delinquent filings/population 10-17	County Juvenile Court
Teen Drug Violation Arrest Rate	Drug arrests of teens/population 12-17	Municipal Police Departments
Cognitive Development and Achievement		
High School Graduation Rate	Persons graduating/persons entering 9th grade	Board of Education
Performance in Math and Reading	Mean performance score	Board of Education
Youth Employment Rate	Employed persons 16-25/persons 16/25	U.S. Census, STF-4
Economic Well-being		
Family Poverty Rate	Poor families/total families	U.S. Census, STF-3
Child Poverty Rate	Children in poor families/children in families	U.S. Census, STF-3
Child Public Assistance Rate	Public assistance recipients < 18/population < 18	County Entitlement Services

[1] Planning and development of this data source is currently underway.

Table 2: Examples of Indicators of Community Context for Children Used in Cleveland Metropolitan Areas

Indicator	Measure	Data Sources
Socioeconomic Composition		
Middle Class Neighbors	% families with income > $35,000	U.S. Census, STF-3
Affluent Neighbors	% families with income > $50,000	U.S. Census, STF-3
Managerial and Professional Workers	% managerial and professional workers	U.S. Census, STF-3
Poverty Rate	% persons below poverty threshold	U.S. Census, STF-3
Poverty Estimates	Estimate of % persons below poverty threshold	Estimates using public assistance counts
Age and Family Structure		
Female-headed Families with Children	% families with children headed by female	U.S. Census, STF-1
Non-marital Birth Rate	% births to unmarried mothers	Vital Registrar
Elderly Population	% population > 65	U.S. Census, STF-1
Male/Female Ratio	Adult males (21-64)/adult females (21-64)	U.S. Census, STF-1
Child/Adult Ratio	Population 0-12/population 21+	U.S. Census, STF-1
Residential Mobility		
Population Gain or Loss	1990 population-1980 population	U.S. Census, STF-1
Movers in < 5 years	% who moved between 85-90	U.S. Census, STF-3
Residential Tenure < 10 years	% in current residence < 10 years	U.S. Census, STF-3
Environmental Stress		
Vacant and Boarded Houses	% housing units vacant or boarded	Municipal housing departments
Housing Code Violations	% units substandard	Municipal housing departments
Personal Crime	FBI index crimes against persons/1,000 population	Municipal police departments
Drug Arrests	Drug arrests/1,000 population	Municipal police departments

Table 2 (continued)

Indicator	Measure	Data Source
Support for Effective Parenting		
School Locations	% Children attending school < 15 minute drive	Board of Education
Recreational Opportunities	Parkland and recreational areas/square mile	Recreation and Park Departments
Community Participation	% parents attending school conferences	Board of Education

[illegible]
10/4/94

Context and Connection in Social Indicators: Enhancing What We Measure and Monitor

Marc L. Miringoff, Ph.D. and Marque-Luisa Miringoff, Ph.D.

A British friend and colleague at the United Nations, with a long career in statistical analysis at a number of U.N. agencies, once noted during an address, that the United States has the best system of economic reporting in the industrialized world and the worst system of social reporting. Allowing for hyperbole, his point was well taken, particularly in terms of the comparative impact of economic and social indicators on the public dialogue and public policy.

Economic indicators, unlike social indicators, are frequently and widely reported and combined into numerous indexes that give them meaning, context, and impact. Economists have created a world of barometers and gauges which continually address the question: 'how are we doing?' and answer it daily, weekly, monthly, quarterly, and yearly, with a large number of recognized instruments, ranging from the Dow Jones Average, to the Index of Leading Economic Indicators, to the Consumer Price Index, to the Producer Price Index. By contrast, social indicators appear infrequently - once a year at best - and are generally assessed in isolation, with little or no context, and no sense of the whole of which they are a part.

As a result of such differences, the public is far better informed about the economy than it is about social well-being. Moreover, this knowledge is closely linked to a highly visible and sophisticated economic policy apparatus. The creation of social policy, alternatively, is much less empirically based and far more vulnerable to ideology and politics.

This paper will argue that in order for social indicators to have greater impact, they will need a more developed and holistic conceptual basis and a more direct policy link; we must examine broader concerns of theory and context as well as issues of empirical methodology and data collection. This perspective has arisen from our experience in creating and refining the Index of Social Health over the period of the past eight years.[1]

Economic Reporting and Social Reporting: Differences in Concept and Impact

There are significant differences between economic and social indicators and how they are reported in the United States. These are apparent in the frequency and precision in which they are reported, in the context in which they are presented, in their connection to public policy, and in the very distinct ways in which we think about economic and social well-being.

The quantity of economic data regularly before us is immense. The Dow Jones Average is communicated to the nation electronically on a minute to minute basis, reported throughout the day in the media, and summarized each evening on every network broadcast. Business starts, business failures, and the money supply are reported weekly. Often, these and other business indicators are presented, not in isolation, but in the context of other indicators, that together form indexes which monitor different aspects of the economy. Many of these indexes are issued monthly to facilitate comparison, detect change, and provide the basis for on-going analysis and possible intervention. The Index of Leading Economic Indicators, the Producer Price Index, the Consumer Price Index, the Index of Consumer Confidence, and others are constantly before us. They carry enormous influence because each indicator is part of the context of the rest. Interpretations of the data may vary, but there is at least a basis for discussion, debate, and policy intervention that is relatively consistent, reliable, and agreed upon.

An illustration of the variety and frequency of economic indicators and indexes is presented in Table 1. Its findings suggest that as a society we deem this information to be of sufficient importance that we collect it, analyze it, and report it in a highly systematized manner. The frequency and accessibility of economic indicators also implies a willingness to respond and to intervene. Their timeliness allows for rapid intervention and even evaluation of the impact of policy change.

Table 1. **Selected Economic and Social Indicators: Reporting Frequency and Lag Time**

	DAILY	WEEKLY	MONTHLY	QUARTERLY	ANNUALLY
Economic Indicators	CRB Futures Price Index (15 sec.) Dow Jones Industrial Avg. (60 sec.) New York Stock Exchange Composite Index (60 sec.) Standard & Poor's 500 Composite Price Index (60 sec.) Wilshire 5000 Equity Index (1 day)	Bank Loans: Com. & Industrial (9 days) Business Failures (5 days) Business Starts (5 days) Money Supply (10 days)	Average Hourly Earnings Index (1-2 wks.) Average Weekly Earnings (1-2 wks.) Average Weekly Hours (1-2 wks.) Balance of Trade (45 days) Capacity Utilization (2.5 wks.) Consumer Confidence Index (5-10 days) Consumer Installment Credit (6 wks.) Consumer Price Index (3-4 wks.) Consumer Sentiment Index (5-10 days) Employment (1-2 wks.) Government Budgets and Debt (3-4 wks.) Housing Starts (3 wks.) Import and Export Prices Indexes (1 mo.) Industrial Production Index (2.5 wks.) Inventory -Sales Ratios (45 days) Leading, Coincident, & Lagging Indexes (1 mo.) Manufacturers' Orders (1 mo.) Personal Income and Saving (3-4 wks.) Producer Price Index (2.5 wks.) Unemployment (1-2 wks.)	Balance of Payments (75 days) Capital Appropriations (70 days) Employment Cost Index (1 mo.) Farm Parity Ratio (1 mo.) Flow of Funds (2 mo.) GNP Price Measures (3-4 wks.) Gross National Product (3-4 wks.) Plant and Equipment Expenditures (2 wks.) Productivity (2 mo.) Unit Labor Costs (2 mo.)	Distribution of Income (8 mo.) Intl. Investment Position of the U.S. (6 mo.) Poverty (8 mo.)
Social Indicators					Amer. Housing Survey (biennial) (1 yr.) Child Abuse (4 mo.) Drug Abuse (6 mo.) Food Stamp Enrollment (3 mo.) Health Insurance Enrollment (8 mo.) High School Dropouts (1 yr.) Highway Deaths Due to Alcohol (10 mo.) Infant Mortality (2 yr.) National Crime Survey (2 yr.) Teen Suicide (2-3 yr.) Uniform Crime Reports (8-9 mo.)

Sources:
Economic indicators adapted from Norman Frumkin, *Guide to Economic Indicators*, N.Y., M.E. Sharpe, 1990.
Social indicators from authors' telephone survey, analysis of data sources. Lag times are approximate.

Numbers in parentheses indicate publication lag time.

Formalized communications throughout the government facilitate the process of economic reporting. Most of the weekly, monthly, and quarterly statistics and indexes in the economic arena are brought together in the annual Economic Report of the President, prepared by the Council of Economic Advisors.[2] This report, though often political in tone, summarizes the essential economic events of the previous year, proposes strategic economic plans for the future, and includes historical data on key economic indicators. Similarly, the Federal Reserve Board issues a survey of economic activity every six weeks; called the Beige Book, this report is designed to synopsize the nation's economic health and enhance rational decision-making.[3] Through its comprehensiveness and frequency, it contributes to the routine and periodic assessment of economic conditions. The very primacy and visibility of other agencies and positions such as the Council of Economic Advisors or the Chair of the Federal Reserve Board, and the relative exactitude of their work (e.g. raising the interest rate a quarter of one percent), add legitimacy and credibility to the endeavor of economic monitoring and the importance of economic policy.

In comparison, social indicators and the endeavor of social reporting are at a still primitive state. Social indicators are far more sporadic, generally reported in isolation, and absent of a context that could be provided by other indicators and by an overall assessment of social well-being. Social indicators are rarely reported more frequently than on an annual basis and often there is a lag time of months and even years. The second half of Table 1 summarizes the state of key social indicators and underscores the comparison with the economic.

It is clear from the infrequent reporting of social indicators and their lack of context and combination, that their influence on the public and on public policy, almost by definition, is far less than economic indicators. This is compounded by the fact that there are few guideposts and officially sanctioned, recognized, and publicized indexes, and no governmental structures comparable to the Council of Economic Advisors in the social sphere. From the perspective of the general public, the reporting of social problems is as likely to be about a spectacular case of child abuse or teenage suicide, than about updated and current national trends. We hear far more about the 'crisis in our cities' or the 'crisis among youth' or 'an epidemic of teenage suicide," suggesting uncontrollable situations not open to solution, than we hear anything comparable to 'the economy expanded by 2.3 percent in the last quarter,' which suggests a pragmatic vigilance and the possibility of rational action if trouble should occur.

As a result of these vast differences, we think very differently about economic problems than about social problems. Economic indicators reflect a whole which seems to affect us all and in which all of us are invested. The parts of the economy that we monitor so closely can be viewed as moving, dynamic, touching each other, and touching the whole. The economy is about 'us.' Social indicators and social problems seem more isolated and separate with little connection to each other or to the whole. Indicators such as teenage suicide, child abuse, or children in poverty, seem disconnected, measuring only the populations inside of their definitions.[4] They appear to be measures of 'them,' rather than us.

We have a limited and fragmented perception of our social well-being because we lack common information and a common context for assessing that information. When several social problems, such as homicide, suicide, child abuse, high school drop-outs, and violent crime, all grow worse at the same time, each is separately portrayed as an individual and isolated crisis. We may feel the combined effects on the quality of our everyday life. We may have a gnawing sense that there is a change for the worse, but we have no systematic way to understand the extent, scope, pattern, or potential consequences of what is taking place. As a result, the quality of public discussion and policy-making about social issues is far more likely to be shaped by the passions of the day and the politics of the moment rather than by rational analysis based on accurate, timely information.

A Concept of the Whole and a Notion of Performance

In order to expand the scope and impact of social indicators and to improve public education and policy deliberation, we need to establish a set of policy-oriented social measures that are generally recognized and regularly reported and to develop an underlying theory to give them context and impact. Some of the issues involved are empirical and methodological: what data will be collected and how. But considerable effort needs to be applied as well to issues of concept and theory. It is the language of economic indicators, their interconnection and the theory that binds them, that gives them their power as well as the sense that they are monitoring the dynamics of something very significant. If social indicators do not move in this direction, no matter how well conceived individually, and how well operationalized, surveyed, and reported, they will not carry significant consequence for the public or the makers of policy.

In order to begin to develop a context, both for social well-being and for social indicators, two factors stand out as points of departure: an idea of the 'whole' that connects the indicators and provides them with a context, and the notion of performance.

The notion of a whole is a difficult one. The tools of our social science trade tend to carry us in an opposite direction: toward disaggregation. Yet a social analogue for the 'economy' is necessary to bring the discussion to the next and needed level, particularly if we are to influence public policy and public awareness and increase the use and reporting of social indicators. Economists can talk about soft spots in the economy, improvement or worsening, expanding or receding cycles or stagnation, recession, or recovery. They can point to the particular performance of specific sectors, how those sectors relate, and their place in the performance of the whole. There is a certain tension and movement, like a good story that unfolds. Without a similar notion of a whole that is being monitored, those of us who analyze and report conditions in the social sphere, can point only to the worsening or improving of individual and unrelated statistics, or to a descriptive list of statistics that are not clearly linked to something larger.

In the area of child well-being, for example, we can single out a series of statistics such as child poverty or child abuse. We can say that one or both are increasing or decreasing, and we can make some tentative statements of correlation between the two. But in this state, such statistics are not really social indicators. An indicator, like a metaphor, carries with it a part of the whole, it is a sounding, it taps into something greater and because of its implicit connection it represents and reflects it. When Durkheim founded modern sociology through the statistical analysis of suicide rates, he wasn't merely examining suicide, but asserting that its patterns told us something about the nature and connection of society's strands, something underneath that suicide rates were signaling. Yet, a statistic like child abuse is an accounting that typically begins and ends within its own boundaries. We need to go beyond it and examine broader questions: What does child abuse indicate about our society? What does child poverty indicate? What does the improvement or worsening of these conditions tell us about other conditions and about the general condition?

Such questions sound highly theoretical, but exploring ways to expand social statistics into real indicators is a practical process. If a social statistic stands alone, disconnected, conceptually or empirically, to other indicators or to a notion of the whole, precise monitoring of isolated sectors of society such as children's well-being becomes problematic. Clearly, for political reasons, that sector is appealing and one needs to start somewhere, but even a superficial analysis leads to the conclusion that children's social well-being, and any individual indicator of children's well-being, is directly related to things beyond children. Isolated analysis keeps our attention on 'them' as a separate sector rather than on 'us,' as a whole, of which they are a part. It implies, as well, that solutions or interventions should be directed toward children, when the origin of worsening conditions may very well lay elsewhere.

More than one in five children in America live in poverty, and many others close to it. It could be argued that this statistic tells us much about the condition of children in this country. But alone, it tells us little about how the condition occurred and more importantly what is to be done about it. It is merely a descriptive statement. It is possible that the most influential indicator of social well-being of children is the precipitous decline of average weekly wages in America since 1973, or the shrinking of the manufacturing employment sector, generally not included in lists of children's indicators.[5] Confining the analysis to children tells us little about the underlying dynamics involved in the well-being of that group.

Interrelated to the notion of a whole is the notion of performance. Performance is deeply embedded in the realm of economic indicators, but generally not a central aspect of social analysis. Without a notion of the whole, we cannot even pose the kind of overall question about the nation's social performance that economists do about the economy: What is our social performance as a nation? Is it improving or worsening? How does it compare to last year? What sectors are getting better? What are the soft spots? Most of us have been trained by the idea that when we build a social construct, such as authoritarianism or racism, we devise instruments to determine its relative degree of presence or absence. We generally do not think about an entity composed of some properties that are improving and some worsening at the same time, such as the factors in the Index of Leading Economic Indicators. We rarely think in terms of an individual indicator as performing against a threshold or standard.

Without developing some social analogue to the notion of economy or the whole, and without focusing on performance, the dynamic realm that characterizes economic indicators is closed to us. Ideas such as leading or lagging social indicators, or a social recession, or cycles or trends in overall social health, from which thresholds and standards can emerge, are not now possible.[6] If an economic recession is defined empirically as three consecutive quarters of no growth, what would it take to declare the nation in a social recession? The absence of this kind of conceptual framework widens the gap between social indicators and public policy and public dialogue.

The creation of a theoretical thread needed to help bind the disparate data and indicators will be a difficult endeavor. The evolution of the kind of dynamic analysis and composite measures that currently characterize economic monitoring will be a slow one, which will begin and build upon the current system of data collection and reporting and its possible expansion. It required many years of research to develop the theoretical and empirical system that finally culminated in the Employment Act of 1946 that established the system of economic indicators, the Council of Economic Advisors, and the Economic Report of the President.[7] Research on the concept of business cycle that was the central idea of the system goes back to the beginning of the century. The theoretical and empirical aspects developed together.

The development of a notion of performance in the social sphere and the need to focus on more holistic approaches that include many indicators and begin to connect them into a context should be an important new focus for our pursuit. Advances in these areas would greatly add to the significance and impact of social indicators, which is particularly important if we are to build new corridors that connect them to policy making and public education. When we consider how to enhance our current system of social reporting, these endeavors must have a central place.

A System of Social Reporting to Improve Policy and Heighten Public Education

We need to explore broader richer ties between social indicators, social policy, and the public dialogue. As currently conceived, most social indicators are not designed to frequently and regularly monitor social conditions in order to detect warning signs which require policy intervention. Bells never go off when the poverty of children reaches twenty percent, or the teenage suicide rate doubles, although the consequences for society and its future are surely as significant as a short term rise in inflation or a slight decline in housing starts.

In determining what kind of system of data collection and reporting is needed, its frequency and its level of aggregation, we need to consider not only the realms where policy is created and technical alternatives debated and hammered out, but the public dialogue as well. We need a rational, pragmatic, and data-based approach to social issues, that broadens and informs the public dialogue. Because of the way in which social indicators are reported and social problems generally portrayed in the media, the public's perception of social well-being can be hazy and courses of action very obscure.

As we have noted, the fact that social data are reported so late makes them peripheral to both the policy process and the public debate. Since data are at very best one year old and often two or more years old, changes can only be traced and analyzed years after the fact, providing a very static picture and necessitating the well worn phrase "the last year for which statistics are available." Such a phrase is rarely if ever needed in economics; few modern governments would attempt to formulate current economic policy with data on interest rates or inflation going back several years.

In order to inform policy and the public in a more timely way, to indicate significant changes in the performance of indicators that affect large numbers of the population, and to aid in the conceptual development of social indicators, we need to significantly improve our system of social reporting.

Indicators should be presented to the public as frequently as possible. Many key indicators could be reported on a quarterly basis, providing an on-going picture of improving or worsening social conditions. Others could be reported annually, but with minimum lag time. Frequent reporting would more finely attune the public to the significance of social issues and provide meaningful opportunities for public education. Reports on the network news that child abuse or teenage suicide had increased or decreased in the past quarter, in the context of patterns over time and with experts quoted, would add weight to the reporting of these problems that their severity deserves. This would be preferable to the currently episodic coverage of problems such as the attention to domestic abuse brought on by the recent O. J. Simpson trial. Over time, this kind of systematic social reporting might change the way many social problems are viewed in the nation.

Where possible, related indicators need to be reported together, providing a greater picture of the whole. A clear, periodic, empirical portrait of the 'state of' children, teenagers, the elderly, or workers, would permit a deeper understanding of the issues and a greater likelihood of formulating social policies that were more comprehensive and less crisis-driven. If the 'state of' the economy is summarized annually through the Economic Report of the President, the 'state of' children, officially assessed by the government, could have equivalent public significance. Such assessments would reduce the isolation and lack of context that currently surround social indicators.

The reporting of changes in the performance of indicators should be stressed. We need to create a system of analysis well suited to public dialogue and policy making, in which key findings can be readily communicated. Much economic monitoring consists only of quarterly or annual percent increases and decreases. Yet these relatively simple statistics can indicate critical swings in the economy, and over time suggest trends, patterns, points of intervention and the ability to forecast events. Social indicators, measured more frequently and with an emphasis on changes in performance, could provide similar information, including possible warning signs and even forecasting potential.

There is a need to develop composite measures where increases or decreases signify broadly changing conditions and which include thresholds which signify the overall improvement or worsening of conditions. We need indexes such as these in the monitoring of social indicators, which are published on a periodic basis, and which have wide public dissemination. The evolution of these kind of measures, geared to an analysis of performance, requires significant theoretical and methodological development. The far more frequent collection and reporting of social data will broaden the view of social performance and suggest further approaches to their development. Without such measures that empirically combine the individual indicators and begin to provide an overall view of their performance, social reporting will remain largely confined to individual statistics and will have far less impact.

Survey and public opinion data are also a necessary complement to objective reporting. Economists use the Conference Board's Consumer Confidence Index and the University of Michigan's Index of Consumer Sentiment as an integral part of their monitoring systems. Official social reports in other countries, rely heavily on social surveys to provide vital information on the 'temper' of their nations regarding issues such as community cohesion, sense of safety, housing, income, problems of disability, etc.[8] In this nation, just as social problem data are fragmented, so too are methodological approaches. It is rare, but clearly desirable to combine both types of data, giving a more integrated sense of the problem and how it is perceived.

It is also necessary to create a data base that allows for comparative analysis of states and regions. Some social indicators are not well enough developed to achieve this end. Child abuse, with its multiple state definitions has such problems. Such data would benefit from being both defined and collected at the federal level.[9] Where surveys are involved, samples of sufficient size are needed to disseminate reliable state and regional data. Normed or adjusted measures also further the ability to compare data. While many economic measures are seasonally and regionally adjusted, few social measures are.

Such expansions and enhancements would greatly benefit our current system of social reporting. Over time, a comprehensive social reporting system, directed toward the assessment of social performance, would allow for a more informed public and a more directed social policy apparatus. As in the development of economic indicators, there is a need to develop a language that can assess cycles of achievement and decline, that includes warning signs based on agreed upon standards and thresholds, and that accounts for the inter-relationships of problems through the use of composite measures. These changes in the way we collect and report social indicators will contribute to that end.

Conclusion

Economic indicators have been afforded a high degree of respect throughout this paper. Their impact and influence, the way in which they are institutionalized, their theoretical, empirical, and dynamic character are important as an analogue for the future development of social indicators. But what they lack is important as well. Economist Amartya Sen has written, that if "the economic success of a nation is judged only by income and by other traditional indicators of opulence and financial soundness, as it so often is, the important goal of well-being is missed. The more conventional criteria of measuring economic success can be enhanced by including assessments of a nation's ability to extend and to improve the quality of life."[10]

Economic indicators, despite their significant influence and relative comprehensiveness, often tell us little about social well-being. They omit much about the changing quality of life of ordinary Americans. In order to understand what is happening in the nation and what needs to be done, we need to know far more about the quality of life than what is offered by the world of economic indicators; and we need to know it with far greater accuracy and frequency than currently exists.

Notes

[1] The structure and methodology of the Index is presented in "Monitoring the Social Performance of the Nation: The Index of Social Health," Children, Families and Government: Preparing for the Twenty first Century, Cambridge University Press, editor Edward Zigler, Yale University, (forthcoming).

[2] See, for example, Economic Report of the President, transmitted to the Congress, February 1994, together with the Annual Report of the Council of Economic Advisors. It is interesting to note that the 1992 report addresses the need for even more enhanced economic statistics, and cites an "Economic Statistics Initiative," which sought an appropriation of more that $150 million from fiscal 1993-97 to develop economic reporting.

[3] Federal Reserve Board. The Current Economic Condition (The Beige Book), Washington, D.C.

[4] Poverty is generally considered to be an economic indicator. However, in this paper, we consider it to be a social indicator as well, in that it is directly connected to social problems and is not a key component of the regular and frequent monitoring system of economic indicators. Interestingly, it is also one of the very few economic indicators collected annually.

[5] See for example, Sar Levitan, Frank Gallo, and Isaac Shapiro, Working But Poor: America's Contradiction, Baltimore, Johns Hopkins Press, 1993; Gary Burtless, A Future of Lousy Jobs: The Changing Structure of U.S. Wages, Washington, D.C., The Brookings Institution, 1990; Wallace Peterson, The Silent Depression: The Fate of the American Dream, N.Y., W. W. Norton and Co., 1994; U.S. Bureau of the Census, The Earnings Ladder, Statistical Brief SB 94-3, Washington, D.C., U.S. Government Printing Office, September 1993; Lawrence Mishel and Jared Bernstein, The State of Working America, Armonk, N.Y., M. E. Sharpe 1993.

[6] The notion of social recessions, cycles, and trends in overall social health is presented and discussed in "Beyond Economic Monitoring: The Dynamics of Social Health," by Marque-Luisa Miringoff, Marc L. Miringoff, and Sandra Opdycke, funded by the Society and Health Program, The Health Institute of the New England Medical Center and the Harvard School of Public Health, with additional support from the Henry J. Kaiser Foundation.

[7] Employment Act of 1946, Pl 304, February 20, 1946.

[8] See for example France's Social Report, Donnees Sociales (Social Data); Britain's Social Trends, Denmark's Levevilkar i Danmark (Living Conditions in Denmark); Germany's Datenreport (Data Report); Italy's Sintesi Della Vita Sociale Italiana (Overview of Italian Social Life) and Statistiche e Indicatori Sociali (Statistics and Social Indicators); Spain's Indicatores Sociales (Social Indicators) and Panoramica Social (Social Panorama).

[9] A federal monitoring system, called the National Child Abuse and Neglect Data System (NCANDS) has been developed in recent years, however it is still dependent on data which has been defined and produced at the state level. Some states include unduplicated counts of children, others duplicated, making comparative analysis problematic. A private non-profit organization, The National Committee to Prevent Child Abuse, is currently the major source for data over time.

[10] Amartya Sen, "The Economics of Life and Death," Scientific American (May 1993), 40.

POPULATION, FAMILY, NEIGHBORHOOD

DEMOGRAPHIC CHANGE AND THE POPULATION OF CHILDREN: RACE/ETHNICITY, IMMIGRATION, AND FAMILY SIZE

Dennis P. Hogan
Department of Sociology

David J. Eggebeen
Department of Human Development and Family Studies
and the Department of Sociology

Population Research Institute
601 Oswald Tower
Pennsylvania State University
University Park, Pa 19802

October 1994

Paper prepared for the Conference on Indicator's of Children's Well-Being, The Cloister Conference Center, Rockville, MD, November 17-18, 1994. Support for this research was provided by core funding (P30 HD28263-01) from the National Institute of Child Health and Human Development to the Population Research Institute. We thank Wendy Manning for graciously providing us with access to child files she created from the 1990 Census and Kristen Robinson for computer tabulations. The related research of our colleagues Leif Jensen and Dan Lichter also was very helpful in approaching this paper.

DEMOGRAPHIC CHANGE AND THE POPULATION OF CHILDREN: RACE/ETHNICITY, IMMIGRATION, AND FAMILY SIZE

INTRODUCTION

For much of human history childhood did not exist in any socially meaningful sense. Only with demographic changes in fertility and mortality that have become to be known as the demographic transition did childhood become a viable status. The demographic transition reduced the number of young persons in the family and enhanced the probability they would survive, thus rendering them worthy of investment. As the same time, parents who wanted to be certain of financial security in old age and to maximize their genetic heritage were compelled to invest more heavily in their children. Schooling was instituted, service and apprenticeships abolished, and paid work postponed for this newly "privileged" class.

By the middle of the twentieth century, this period of social and economic dependency had come to characterize the teenage years as well. High school education became the norm for economic success, a requirement later upgraded to college. Initially, this prolongation of dependency during adolescence was hidden by patterns of early marriage and parenthood during the Baby boom. But as the timing of the economic and family transitions became more separate and were both postponed, adolescence emerged as a second major stage of the lifecourse. It became a stage in which many formerly viable behaviors (work, marriage, parenthood) became unusual, deviant, or undesirable for that age strata.

This account of the origins of childhood and adolescence suggest that these life stages are defined by demographic realities and social and economic institutional arrangements of society. Developmental processes may be distinct during these life stages, but in some sense are clearly secondary to demographic realities and the forces of history. One might expect that, given the role of demographic processes in the creation of childhood and adolescence as distinct stages of the lifecourse, demographic research would be at the forefront in studying these groups.

Instead, demographers have focused on nuptiality, fertility and mortality—the experiences of adults. Children came into the picture only when the concern was infant mortality and, more recently, when teenagers become pregnant. Eleanor Bernert published one of the first major demographic studies of American children in 1958. Using data from the 1950 census, Bernert documented family structure and living arrangements, school enrollments, and employment patterns from the perspective of children. This study stands nearly alone (see Glick 1976 and Sweet 1974 for exceptions to this) till the end of the 1970's when accelerating changes in marriage and divorce prompted demographers to take a look at the consequences for living arrangements of children (Bane 1976; Bumpass 1984a, 1984b; Bumpass and Rindfuss 1979; Furstenberg et al. 1983; Glick 1979; Hofferth 1985). It has only been recently that demographers have widened the scope of their concern with children to include analyses of children's experiences of parental employment, family size changes, poverty, and so on (cf Blake 1989; Duncan and Rodgers 1991; Eggebeen 1988; Eggebeen and Lichter 1991; Hernandez 1993). Even with the publication of Hernandez's (1993) encyclopedic overview of the demographic transformation of childhood, considerable gaps remain in our knowledge about the changing characteristics of American children.

The purpose of this paper is to evaluate the status of our understanding of three important features of the population of children: race/ethnicity, immigration, and family size. Previous treatment of these indicators has been uneven, with no standard approach or measures. Family size changes and their implications for children, as well as race/ethnic variations in child living arrangements and the experience of poverty have received the most attention. In contrast, immigration has been virtually ignored (see Jensen (1994) for an exception). For example, the absence of information on Hispanic origins until recent censuses, and subsequent variations in its measurement, restricted Hernandez to black/white comparisons for all except the most recent decade. The waves of immigration of white ethnic groups that transformed the population of American children during the first half of this century, and the more recent immigration waves of non-whites that has been a driving force in demographic change since the mid-1960s, largely is ignored. Are these neglected aspects of the family origins of children important? Do they alter or modify the consequences of family structure and family socioeconomic resources? These are issues which we will address.

We will also look at measures of family size. This is a potentially important measure of child well-being while growing up, potentially affecting socialization patterns, parent-child interactions, and access to resources. Declines in the average number of children born to women and changing family structures over the past 40 years have undoubtedly altered the family sizes of children and, possibly, their well-being.

This Conference on the Indicators of Children's Well-Being offers a fresh opportunity to reach a collective agreement about the best social indicators of child well-being. Armed with such a consensus it may be feasible to significantly improve our knowledge of the complex life course of children, viewed in the cultural and social structural contexts to which they and their families are assigned. This is even more important for certain states and regions of the nation in which there is great diversity in the race/ethnic and immigration experiences of children. We will argue below that such an approach can significantly improve the reporting on children's well being, and that modest modifications in usual procedures for the collection and production of data on children will prove particularly helpful.

We will deal with each of these features in turn. After discussing why knowledge of this feature is important, we plan to describe how this indicator is currently measured in the U.S. Census of Population, paying particular attention to the relevance of these measures for understanding the experience of children. We will briefly, and somewhat superficially, describe the population of children for this indicator using PUMS files of the 1990 Census of Population. Our assessment of each of these features will conclude with a discussion of how these constructs can best be defined using currently available procedures and instruments of data collection.

RACE AND ETHNICITY

Rationale

Race and ethnicity are not variables that directly measure child well-being. Few if any analysts would claim that, controlling for socioeconomic resources and socialization environment (family structure and size), children of one race have inferior well-being compared to children of another race, *per se*. Rather race and ethnicity are important because they: (1) index average levels of socioeconomic resources in families and modal forms of family structure, both of which are direct measures of the well-being of children; (2) measure the access of the families to opportunities for achievement (e.g., labor markets, advanced education); and (3) are associated with the concentration of families in neighborhoods which define the social structures and cultural experiences of children outside of their families. Race and ethnicity are thus used in studies of child well-being as variables that classify children into types who have distinct outcomes on measures of well-being. Such a use is one way in which groups of children "at risk" may be defined. But race and ethnic information may also serve as control variables that define distinct population subgroups. This is done when looking at the association of other factors with child well-being, as for example, with the effects of single parent family structure on family income.

Measurement

For the past half-century most demographic data collection and research has viewed a person's race and/or ethnicity as a matter of self-identification. While members of the society may ascribe race or ethnic identity to a person with whom they interact, and modify their actions accordingly, researchers see this as secondary to self-identification. One reason for this is the virtual impossibility of defining race and ethnicity precisely in a multicultural society such as ours, in which intermarriage and ethnic mixing are commonplace. Another is that race and ethnicity are seen as cultural concepts of considerable importance to person's definition of identity and community. Typically this self-identification is communicated to the larger society and used by members of that society to classify persons in the metric of social relations. But as a subjective concept that may be represented differently in various settings, ethnicity is not always reported consistently across different contexts even when the informant is the same person (U.S. Bureau of the Census 1974). This problem is exacerbated across different interview contexts.

This situation is even more confusing in the case of children. In situations in which parents and children coreside, the race and ethnicity of each member of the family can be ascertained. In many cases, there is agreement and the ethnicity of the child can be likewise assigned. But in cases of different race or ethnicity of the father and mother or ethnic difference between the head and other adults in the household the situation is less well defined. In such cases a procedure may be developed for determining the race and ethnic origins of children from data on adults in their family. But the logic of an analysis using parental subjective race and ethnic self-identification information to objectively classify children based on their origins is not clear.

We believe a preferable strategy is to obtain "self-identified" (actually, in the case of children, family-identified) race and ethnic origin information for each child. In this way, each family (or its representative respondent) can indicate the race and ethnic identification with which the child is being raised, reflecting the way in which the child is presented to society (e.g., neighborhood, school).

This procedure has the additional advantage of permitting similar rules of classification for children whose parents are not both coresident and whose race and ethnic origins are partly unknown. We thus are in agreement with Rogers (1989) that race and ethnicity of children should be determined on the basis of identification within the family of socialization. Our suggested procedure, however, is based on a family informant's responses about the child (making it a purely subjective measure), rather than on the automatic assignment of race and ethnicity of coresident mother.

We note that while this recommendation is currently the procedure followed by the decennial census, it typically is not the practice in studies of children that are not household-based. For example, birth certificates typically collect ethnicity of the mother, but not always of the father, and not of the infant. Infant death certificates provide the race or ethnicity of the child as reported by a "knowledgeable" informant (possibly a family member, but possibly a physician, coroner or funeral director). Mothers more often provide birth certificate data whereas fathers more often are informants for the death certificate. Norris and Shipley (1971) report that in California from 1965-67 as many as 17 percent of Chinese and 43 percent of Japanese infants were given discrepant race assignments at birth and at death.

Ideally, we believe that whenever possible data collection instruments for children should directly collect information on the race and ethnicity of children. This can be readily done with Census questions, but these may be usefully modified (Entwisle and Astone 1994). Under their recommended procedure, Latino ancestry is ascertained first. For those reporting Latino origins, Mexican, Puerto Rican, and Cuban nativity is then determined. All children are then classified according to whether they are white, African American, American Indian, Asian and Pacific Islander, or other (specified). This collection procedure has the advantage of keeping Hispanic origins and race as separate concepts, while allowing investigators to readily classify children into mutually exclusive and exhaustive categories that combine race and ethnicity (as we suggest below).

We have argued that race and ethnicity in the United States are socially and culturally determined rather than biologically or genetically defined. Accordingly, the questions used to elicit racial identification and the measures constructed from this information have varied over time and reflect the size and impact of any given minority at that time. Membership in the "majority" population also changes over time as groups once regarded as inferior gain in social standing and are held in less social distance. (For example, three ethnic groups who are today usually included as part of the white majority are Italians, Irish, and Jews. These groups would not have been so regarded in the early part of this century.) In other cases (such as Native Americans) self-identification with an ethnic identity has grown and waned with ethnic consciousness and sentiment. Throughout our national history, however, selected race and ethnic groups have merited attention; analysts cannot afford to ignore such defining constructs in the fabric of American life when they study children. This is apparent in the examinations of the well-being of American children of different race and ethnic origins in 1990.

Application and Evaluation

The 1990 Census of the United States uses a series of questions about race and national origin to define all persons as black, Native American (American Indian), Asian and Pacific Islander, and white. In some published tabulations the "other" races are not shown separately, but are included in the figures for the total population (due to sample size considerations).

Hispanic origin information is gotten from all respondents so that both blacks and whites can be further classified as Hispanic origin or not. In its tabulations the Census Bureau typically shows data for whites, blacks, and others (Native Americans, Asian and Pacific Islanders), with data for Hispanics (both white and black) tabulated separately. With this approach, the race and ethnic identification of the population is not defined in a mutually exclusive and exhaustive categorization. One argument in its favor is that it does tap American reality—many Puerto Ricans and Cubans are self-identified as being both black and Hispanic. This solution seems acceptable when doing cross-tabulations of census data and does not lead to analytic error. But this solution is not succinct, effectively doubling the number of tabulations needed. Another possibility would be to subdivide the black and white categories according to Latino origins. But this also is costly for analytic clarity since it produces a new category (black Latinos) with very few children in that category. One 1984 study, for example, found that only 2 percent of Mexican American births, 7 percent of Puerto Rican births, and 12 percent of Central and South American births in the United States were black (National Center for Health Statistics, 1987:10, as reported in Rogers 1989).

We believe that it may be useful to retain the race and Latino ancestry variables as separate constructs in local or regional studies of populations in which Latinos are predominantly of Puerto Rican or Central and South American origins, but that there is little analytic advantage associated with this distinction for the Latino population as a whole, and for areas in which Mexican Americans predominate. We therefore advocate that for most studies of children the population first be defined as either black or nonblack, followed by a categorization of the nonblacks into those of Hispanic and non-Hispanic origin. This recommended procedure thus gives emphasis to the black/white racial line which has always assumed primary importance in the nation's history. Blacks of Hispanic origin are, if anything, typically even more disadvantaged than non-Hispanic blacks, suffering both from their minority racial identification, language differences, and predominant migrant origins. To the extent that race and ethnic identification are measures of socioeconomic resources and access to achievement opportunities, this is a reasonable classification for analysts to use. It also preserves a distinct Latino category of nonblack children for this rapidly growing minority.

A study of children using 1990 Census data shows that it is useful to distinguish whether children are non-Hispanic white, black, Hispanic (Latino), Asian and Pacific Islander, or American Indian (Hogan and Lichter 1994). For example, 81 percent of white and 84 percent of Asian children live with both parents, compared to 64 percent of Latinos, 56 percent of American Indians, and 37 percent of blacks. Poverty rates are 11 percent for whites, 17 percent of Asians, 31 percent of Latinos, and 39 percent of American Indians and blacks. These poverty rates are more greatly affected by family structure for some of the groups than for others—standardized for family structure, the poverty rate is 11 percent for whites, 18 percent for Asians, 27 percent for Latinos, 22 percent for blacks and 31 percent for American Indians. By distinguishing these five race/ethnic groups it can thus be seen that family structure plays a key role in the high poverty levels of black children, but is of much less importance for Latinos and American Indians. For these other groups, immigrant status, education, and access to economic opportunities are of the utmost importance.

Further analysis demonstrates how family structure and labor supply decisions distinguish children in these race and ethnic groups (Hogan and Lichter 1994). Between one-fifth and one-quarter of children who are white, Latino and Asian live in two parent families in which only the father works full-time; only 7 percent of black children live in this type of traditional family environment. Asians (36 percent) and whites (27 percent) most often live in families in which both parents are present and working full-time. For black children, life in a mother-headed family in which the mother does not work or works full-time are equally typical experiences.

Specialists in ethnic studies often argue that it is extremely important to distinguish national origins among the various Hispanic groups and among Asian and Pacific Islanders. Indeed, Hogan and Lichter (1994) find substantial variations in family structure and economic well-being of Puerto Rican, Cuban, Mexican American and other Hispanic children. For example, almost one-third of Mexican origin children and 40 percent of Puerto Rican children are poor, compared to only 14 percent of Cuban children. The poverty rate of Puerto Rican children would decline to 25 percent if Puerto Rican children had living arrangements like those of whites, but living arrangements were much less important in explaining the poverty of Mexican and Cuban ancestry children. The inferior well-being of Puerto Rican children compared to those in other Latino groups appears to be more a function of their distinct family structure differences than anything else (e.g., geographic concentration, cultural differences, linguistic isolation). This finding is consistent with studies of family support to the elderly among these groups (Himes, et al. 1994).

Other tabulations of the 1990 Census suggest that systematic differences by national origin group among the Asians are tied mainly to migration experiences. Third or later generation Asian children differ little in family structure and poverty by whether they are Chinese or Japanese origin, and have experiences more like those of native whites. As seen below, more recent Asian immigrant groups are disadvantaged by linguistic isolation, non-transferrable human capital skills, and family separation. But the national origin groups do not show distinct systematic differences in the well-being of children, taking these features of the immigrant experience into account. Indeed, research shows that there are few differences among these Asian immigrant groups in support to elderly family members, once these other distinguishing features of their immigrant experience are taken into account (Himes et al. 1994).

Recommendations

Based on these findings, we thus believe it is useful to distinguish a minimum of five race and ethnic groups in studies of child well-being—non-Hispanic white, black, Latino (nonblack), Asian and Pacific Islander, and American Indian. We strongly urge the use of these categories of race and ethnic identification whenever possible to obtain reasonably complete information on ethnic identity and opportunity.

Such a breakdown is appropriate when analyzing current Census data on children. But changes over time in race and ethnicity identification information, and changes in the salience of different ethnic identities over time, often render such detailed categories impossible or useless for historical comparisons. In the case of historical work, a distinction between blacks and nonblacks, with attention to Hispanics in recent decades, has been the preferred strategy (Hernandez 1983) for studies focusing on the experiences of the national population of children.

But apart from Census studies, even the largest surveys (such as the Current Population Survey) typically lack the sample designs (primary sampling units with concentrations of race and ethnic minorities) and overall sample sizes to represent Asian and Pacific Islander children and American Indian children separately. Resultant sample files made available to investigators have far too few cases to adequately represent the different Asian origin groups, and usually are too small to represent any Latino groups individually (except Mexican Americans in the case of an oversample). This is true of such frequently used data sources as the National Longitudinal Survey of Youth, the associated Mother/Child Files, and the National Survey of Families and Households.

In this situation constrained by practical considerations, we recommend using a three-fold race and ethnic classification for children: nonblack non-Hispanics, nonblack Hispanics, and blacks. With this classification, all children who are identified by their family member as black—whether Hispanic and non-Hispanic—are classified as black. American Indians and Asians and Pacific Islanders are classified with whites in the nonblack non-Hispanic group. We believe this procedure is acceptable if not desirable. The small numbers of American Indians and Asians and Pacific Islanders have little impact on the white category when included there; the advantage of the procedure is that it permits all children to be assigned a race and ethnic identity rather than being dropped from study. The disadvantage is that in this case it is more a nonidentity—nonblack non-Hispanic—than a socially meaningful identity.

An alternative solution is to include only whites in the first category, excluding the American Indians and Asians and Pacific Islanders from any of the identified groups. With this solution all children, including these two rarer groups, are included in the total and each category is a more accurate reflection of social identity. The drawback here is that the parts do not add to the whole.

We produced tabulations from the 1990 Census to illustrate the application of these alternative race and ethnic identifications of American children. These tabulations were done for the entire United States and separately for four states (California, Florida, Minnesota and Pennsylvania) with widely differing race and ethnic compositions. Just under three-quarters of American children are nonblack non-Hispanic in 1990. This proportion varies greatly across the selected states from a high of 95 percent in Minnesota to a low of 57 percent in California. Most children in the United States are either white non-Hispanic, black (15 percent), or Hispanic (12 percent); fewer than 3 percent are Asian and Pacific Islander and less than 1 percent are American Indian. For the nation, we believe that a three category classification of race and ethnicity (nonblack non-Hispanic, nonblack Hispanic, and black) is quite adequate to (1) index average levels of socioeconomic resources in families and modal forms of family structure; (2) measure the access of the families to opportunities for achievement; and (3) indicate the concentration of families in neighborhoods which define the social structures and cultural experiences of children outside of their families.

However, these tabulations also illustrate the importance of using the more detailed five category scheme (that separates out Asian and Pacific Islanders and American Indians for particular states. The unique situation of Asian children in California, for example, would be obscured without a more elaborate classification of race and ethnic identity. Asians constitute 9.9 percent of all children in California, while blacks make up only 7.8 percent of children in that state. One third of all children in California are Hispanic, highlighting the importance of this group in California's recent population history.[1]

IMMIGRATION

Rationale

Children who are themselves immigrant or are descendants of immigrant parents typically have distinctly different social origins than other American children, both minority and majority. Besides distinct ethnic origins, minority children often grow up in homes with more complex family structures, with inferior or nonconvertible socioeconomic resources, and with linguistic or geographic isolation from the nonimmigrant white majority. The families of children living in ethnic enclaves may even lack access to the full labor markets of the communities, while having privileged access to labor markets serving the local immigrant population.

For these reasons we anticipate that the immigrant experiences of children are important to distinguish in studies of child well-being. But the immigration status of children and their parents has been notably absent in prior studies of children. This is true even though great attention has been devoted to the experiences of immigrant adults. For example, in his census monograph on American children, Hernandez (1993) makes only passing reference to the impact of immigration on the population history of the twentieth century United States and ignores differences between children of immigrants and those of native origins. In their otherwise comprehensive study of immigrants in the United States, Jasso and Rosenzweig largely ignore the experiences of children in immigrant families, except for a brief treatment of their school enrollment. Yet, as Jensen and Chitose (1994) have argued, such an investigation would be a natural extension of Lieberson's (1980) research on the progress of turn-of-the-century immigrants and the work of Portes and Zhou (1993) on the political economy of immigrant families.

We thus have reason to believe that immigrant status may be an important factor differentiating the life chances of American children. Recent increases in immigration, especially the shift to migration based on family reunification preferences (Jasso and Rosenzweig 1990), mean that an increasing percentage of children are either foreign born or live with foreign born parents. By 1990 14.7 percent of American children were either foreign-born or the child of a foreign born coresident parent (Jensen and Chitose 1994). Yet few studies, even comprehensive census-based monographs focused on children and on immigration, have attended to this issue. What we try to determine here is whether this neglects an important aspect of American child well-being, or whether immigration status can continue to remain ignored.

Measurement

The first matter to be discussed is how immigration status is, and should be, measured for children. The 1980 Census monograph on immigration (Jasso and Rosenzweig 1990) provides an excellent reference work on the measurement of immigration and the analysis of the immigrant experience. For all of the twentieth century the decennial census has collected information on country of birth, and most censuses have asked about year of entry to the United States for those who were foreign-born. Until recently the Census also identified whether parents were foreign born and, typically, their country of birth. But this information on nativity was last collected in a comprehensive fashion in the 1970 Census. For adults, therefore, current census procedures do not permit identification of nativity status.

The situation is different for children who coreside with their parents, since the census collects country of birth for all persons in the household. Studies of immigration on the well-being of children thus can still make use of a nativity distinction (foreign born, native born of a foreign born parent, or native born of native parents) as long as the investigator is willing to restrict study to children who coreside with parents. For children who coreside with only one parent, nativity can still be defined based on the coresident parent. Insofar as it is the distinct family environment of immigrants that is thought to influence child well-being, these restrictions and limitations in defining nativity status are not problematic. Another advantage of a focus on the nativity of children is the comparability of this measure over extended periods of time.

The censuses of this century have made repeated but varied attempts to assess the integration of immigrants into the national population. Sometimes the focus has been on the timing of entry and length of time in the United States, and on whether the immigrant is a naturalized citizen. Other times the census has collected data on language—either mother tongue, English language ability, or language spoken at home—as an indicator of acculturation and of isolation from the larger society. The variations in these questions over time hinder the analysis of trends.

But these measures are inferior to immigration status for studies of children. Participation in the census and completion of its long-form questionnaire is itself partly dependent of language ability. A scale of English language ability is also far more subjective a categorical report of nativity, and is probably subject to much greater variability across potential respondents within the household. For some immigrants, the ability to speak English is an indicator of socioeconomic status in the country of origin more than it is a measure of isolation after migration. As Jensen and Chitose (1994) have argued, language facility may be more important for some immigrant groups than for others—those who have established immigrant communities that constitute ethnic enclaves (community and labor market) may actually benefit from greater retention and use of mother tongue. For these reasons, we recommend the use of nativity over alternative measures of the immigrant experience of children.

Application and Evaluation

Does nativity matter? Jensen and Chitose (1994) have provided a comprehensive description of children who are foreign-born or native-born of foreign-born parent(s) (which we will refer to as "immigrant" children) compared with children who are native-born of native-born parents (whom we call "natives."). Their analysis uses 1990 Census data for children who coreside with a parent who is household head or spouse of the head. They find that, on average, immigrant origin children have households that are of larger size (5.2 v. 4.4 for the natives), due only in part to a larger number of related children (2.7 v. 2.2). Immigrant children more often grow up in families in which the head of household is male and married, compared to native children. They live in housing units that are smaller and more crowded.

The immigrants on average experience inferior economic circumstances—22 percent of immigrant children compared to 17 percent of native children are in poverty. But poverty among the immigrant children appears to be a transient situation—native-born children whose parents arrived in the U.S. prior to 1975 (five years or more before the Census) have poverty levels lower than the native-born. In contrast, over one-third of recent immigrant children are in poverty.

For some immigrant children, however, the household head lacks educational credentials to ensure occupational success in the overall labor market (one-quarter live in households where the head has eight years of less of schooling compared to only 3 percent of native children). Additionally, many of the immigrant children grow up in houses that are linguistically isolated (a household in which no one over 14 speaks only English or English as a second language "very well"). Fewer than one percent of the native children live in linguistically isolated households, compared to 41 percent of the foreign born children and 21 percent of the native born children of foreign born parents. Spanish is the most common language spoken among the linguistically isolated, accounting for almost half of the children in those families.

These circumstances force more reliance on multiple workers and multiple jobs and on jobs in ethnic enclaves to escape poverty. Also, comparisons of immigrant and native households indicate that labor force involvement is greater and welfare dependence among the immigrants. These differences are even greater when foreign-born children are compared to native born children of native parents.

Thus, a variable measuring the immigrant origins of children (1) indexes average levels of socioeconomic resources in families and modal forms of family structure, both of which are direct measures of the well-being of children; (2) measures the access of the families to opportunities for achievement (e.g., labor markets, advanced education); (3) indicates membership in a family with cultural attitudes, values, and family relations that may differ from those of the majority, and (4) is associated with the concentration of families in neighborhoods which define the social structures and the cultural experiences of children outside of their families. As such, immigrant status is a useful distinction to make in national studies of the well-being of children in which there are sufficient numbers of immigrant children for analysis.

However, the origin characteristics and national origins of immigrant children vary greatly (in large part as a consequence of changing U.S. immigration policies), and show pronounced change over time (Jasso and Rosenzweig 1990). In 1990 31 percent of first and second generation immigrant children were Mexican origin and 34 percent were of Asian origin (using race and ethnic information for their household head; Jensen and Chitose 1994). However, looking just at the foreign-born children, 56 percent were of Asian origins.

These immigrant children are not distributed evenly among the states—concentrating in states with major metropolitan areas (California, Connecticut, New Jersey, New York, and Illinois) and in some states with close proximity to Latin America (Arizona, California, and Texas). Indeed, just four states (California, New York, Texas, and Florida) account for 63 percent of first and second generation immigrant children (compared with 25 percent of the native children). California, as home to both many Mexican and Asian immigrants, is one state for which it is particularly important to consider the immigration status of children—34 percent of all first and second generation immigrant children live in California. Thirty-eight percent of all children in California are either foreign born or native born to foreign born parents (calculated from data in Jensen and Chitose 1994, Table 1 and p. 4).

Recommendations

We conclude that studies of child well-being at the national level would benefit from identifying the immigrant status of children. While a measure that distinguishes foreign-born, native-born of foreign-born parent(s), and native-born of native parents is conceptually ideal, a simple distinction between immigrant children (categories a and b) and natives is adequate, given that the families' characteristics depend mostly on the parents' immigration status. In some states and major urban areas, most notably California, an adequate analysis of the well-being of children is not possible without consideration of immigrant status.

These recommendations ignore the extent to which immigrant status will differentiate children already considered separately by race and ethnicity. Seventy-nine percent of immigrant children would already fall into either the Asian and Pacific Islander (34 percent) or Hispanic (45 percent) race/ethnic classification recommended above. Conversely, fully 91 percent of the Asian and Pacific Island origin children are either first or second generation, as are 55 percent of the Hispanic children. There thus is not great overall analytic gain from considering both immigration status and race/ethnic origins in studies of the well-being of American children. However, such a distinction is of much greater importance in analyses of the impact of national

Table 1
Family Sizes of Children

		Race			State			
	Total	White	Black	Hisp.	CA	FL	Minn	Pa
Num of Related Children <18:								
1	22.5	23.6	21.8	16.9	20.6	25.9	18.7	23.9
2	39.3	42.1	32.2	31.0	36.5	39.2	38.5	41.1
3	23.8	23.2	24.1	26.8	23.9	27.6	28.4	23.8
4	9.1	7.6	12.6	14.5	10.9	8.1	9.9	7.9
5	3.2	2.3	5.2	5.9	4.4	2.9	3.1	2.1
6	1.2	0.7	2.4	2.8	2.0	0.8	0.8	0.7
7+	0.8	0.5	1.7	2.0	1.7	0.6	0.5	0.6
Ave. Num of Related Children:								
	2.39	2.27	2.62	2.80	2.56	2.28	2.45	2.28
Ratios:								
All Families:								
Kids/All Adults	1.25	1.17	1.57	1.35	1.23	1.21	1.31	1.19
Kids/Par.	1.47	1.31	2.06	1.80	1.58	1.45	1.43	1.38
Two-Parent Families:								
Kids/All Adults	1.10	1.09	1.11	1.17	1.11	1.03	1.19	1.08
Kids/Par.	1.20	1.16	1.27	1.42	1.30	1.13	1.24	1.15
Single-Parent Families:								
Kids/All Adults	1.83	1.67	2.01	1.94	1.74	1.82	1.99	1.73
Kids/Par.	2.42	2.08	2.72	2.77	2.50	2.37	2.37	2.28

Source: 1990 PUMS files of the 1990 U.S. Census of Population.

immigration policies on the well-being of children. This is especially the case for the study of children in California, where it is essential that studies of children consider immigrant status as well as race and ethnicity.

FAMILY SIZE

Rationale

Population size is a central concern of demographers. Because of this, analysis of the components of population growth—fertility, mortality and migration—form the intellectual core of what demographers do. Of these three components, the preponderance of attention has been given to fertility, in no small part because it is the most amenable of the three to intervention. Historically, much of this attention has been on the causal mechanisms involved in the timing and number of children born, as well as the consequences of fertility shifts for adults, families, and societies. Less appreciated, at least until recently, is that as women have changed the timing and number of children they bore, the sibling experience of children across successive cohorts has inevitably changed as well (Blake 1989; Eggebeen 1992).

That family size matters for children's well-being has been amply demonstrated by the work of Judith Blake (1989). Drawing on a broad array of nationally representative data sets, she assembles overwhelming evidence that number of siblings negatively effects cognitive development, some aspects of social development, and, most significantly, educational attainment. There are several possible reasons for these relationships. Judith Blake, for example, suggests a "dilution model" of parental inputs. Quite simply, the more children, the more parental resources are divided and hence, the lower the quality of the output (Blake 1981; 1989).

Others point to the theoretical importance of group size on the possible interaction patterns of members of a small group. Thus, small group theory, when applied to family units, implies that parenting styles are probably quite different in large and small families. Specifically, a greater number of children increase the likelihood of parental frustrations in dealing with the complexities of individual personalities and needs, the variety of role definitions, and the day-to-day demands and pressures of family life. Such frustrations and pressures may lead to more punitive, authoritarian parenting styles. Indeed, tests for differences in parenting styles by family size are generally supportive of these notions, finding that behavioral control, methods of rule implementation, and affection patterns all vary in families by the number of children (Elder and Bowerman 1963; Nye, Carlson and Garrett 1970; Peterson and Kuntz 1975; Scheck and Emerick 1976; Kidwell 1981; 1982). In any case, both explanations agree that having a large number of siblings is a disadvantage for a child.

Measurement

Because the Census collects information about all the occupants of households and how they are related to the household head, it is the data of choice to estimate the family sizes of children. In addition, it has collected this information on household occupants in a fairly standard way for some time, thus making comparisons over time relatively easy to do.

There are two ways of determining family size in census data. The first is to use the question asked of women (or, in this case, the mother of the child) on the number of children ever born. The major advantage in using this question is that it better approximates the experiences of siblings over the course of childhood than questions which focus on current living arrangements. The number of siblings currently living with a child underestimate the experience of siblings over the course of childhood (Hernandez 1993: Table 2.3). For example, the median number of siblings aged 0 to 17 for children in 1980 was 1.8, but the median number of children-ever-born to mothers of those children was 2.26.

The problem with using this children ever born measure of family size is that the number of children ever born to a child's mother is not necessarily the number of siblings they have experienced in childhood (because of noncoresidence or death). In particular, last borns also may have had little, if any, exposure to older siblings, who in some cases may be out of the home for much of their childhood.[2] Since the question is only asked of women, we cannot determine the sibling experience of children living with their fathers but not their mothers (4.8 percent of all children in the 1990 Census (Eggebeen, Manning and Snyder 1994). Also, the sibling experience of children with a step-mother, is inaccurately represented, since she reports her fertility history, not that of the biological mother of the child.

The second way to determine the family sizes of children is to count up the number of siblings of the child currently living in the household. A major advantage is that it can be obtained for all children living in households. This avoids some of the problems with using maternal report of children-ever-born outlined above (e.g., inaccurate for children with step-mothers and children in father-only families). It also focuses attention on the immediate situation of children (with whom are they currently sharing parental and familial resources). This is more relevant both as a measure of small group dynamics and resource dilution. However, because it is a cross-sectional snap-shot, this measure does not do very well at indicating the life course experience of a child.

Most studies have used some form of the number of children or number of coresident siblings to indicate the family size situation of children. What this misses is a key link between family size and the well-being of children: the number of parents or adult caretakers of the child and their siblings. That is, not only is the amount of resources available to a child determined by the number siblings with which a child has to compete, but also by the number of caretakers dispensing those resources. This distinction is especially important when considering the situations of minority children, who are more likely than white children to live in extended or complex households (Hernandez 1993). Such consideration improves the specification of the resource dilution model, but is not useful as a measure of interaction complexity (which depends on actual size).

A useful way to take into account both of these factors is to calculate ratios of children to parents or adults in the home. There are both potential advantages and drawbacks to using ratios as proxies of potential resources available to children. First, we are assuming that having more adults in the home is advantageous to the child. While most of the time this is a reasonable assumption, it could very well be that in some cases additional adults (such as a dependent, elderly grandparent) *compete* with the child for the parent's attention. This possibility has not been addressed in the literature, unfortunately. Where the consequences of additional adults in the household have been analyzed, the focus has been on their economic consequences. That is, these additional adults in the household are portrayed as an adaptive strategy, used to cope with poverty by providing additional income or freeing the mother to enter the labor force (Tienda and Angel 1982; 1985).

A second assumption that is made in using these ratios is that all adults in the home are of equal value when it comes to imparting resources to children. This assumption may seem especially heroic when the additional adult is a non-relative like a roomer or boarder. In most cases, however, the additional adult is some sort of relative (grandparent or aunt/uncle) for whom it is reasonable to assume they provide something for the benefit of the child. More problematic are cohabitating partners. The 1990 census is the first census to explicitly ask about persons who are not related to the householder but "have a close personal relationship with the householder." A not insignificant proportion of children (3.5 percent) were living with a parent who was cohabitating at the time of the 1990 census (Manning and Lichter 1994). Unfortunately, whether or under what conditions cohabitating adults function as surrogate parents is unknown.

Despite these drawbacks, child-adult ratios offer some distinct advantages. By taking into account both the number of potential givers of resources as well as the potential number of competitors for resources, child/adult ratios more accurately approximate parental resources available to the child than simple counts of the number of children-ever-born or number of siblings. These ratios also require very few pieces of information (just the number of children and adults or parents in the household), making historical comparisons easy. Finally, it is fairly easy to vary assumptions about resource sharing within households by calculating ratios based on parents only or on related family members only, instead of on all children relative to all adults in the household.

Application and Evaluation

Based on calculations from the 1990 Census, we provide in Table 1 some examples of the distributions of children by family size. Nationally, less than one-quarter of dependent children live in households where they are the only child; that is, households in which they have no competitors for adult or parental attention. However, living with large numbers of siblings also has become quite rare: only about five percent of children live in households of 5 or more children. While the mean number of children in the household is 2.39, the average child per adult is considerable lower (1.25). However, this ratio is quite sensitive to various assumptions. For example, if you assume that only parents make significant contributions to child well-being, the ratio of children per parent is marginally higher (about 18 percent higher) than the child-adult ratio.

Even more significant, however, are assumptions about single versus two-parent families. To wit, if one assumes that two parents offer a number of intangible benefits to children beyond reducing the child to adult ratio (e.g., that a ratio of four children to two parents is "better" than a ratio of two children to one parent), then one may want to calculate separate ratios by the number of parents. Child-adult and child-parent ratios are considerably lower for children in two parent families. Children in single parent families are more likely than children in two-parent families to have other adults present in the household from which they can potentially draw resources. However, these other adults do not offset the disadvantage to these children of having only one parent. The ratio of children to all adults is 1.83 in single-parent homes (about 52 percent higher) compared to a ratio of children to parents of 1.2 for children in two-parent families.

We also examined race/ethnic and selected state differences in these measures of adult/child ratios. We do not go into the specific differences here other than to note that national totals obscure significant sub-group diversity in children's family experiences (the data are provided in Table 1). For example, white children retain considerable advantage over minority children in the number of siblings and in the ratios. There is moderate diversity across states as well; something often overlooked in more typically used national level data. Interestingly, these state differences in ratios do not appear to be associated with large minority populations. Minnesota, for example, which is 95.1 percent white, has the highest child-adult ratio (1.31) and the highest child-adult ratio among children in two-parent families (1.19) of the four states portrayed.

Recommendations

It is clear from the above reviewed studies that family size is an important determinant of childrens' well-being. We recommend measuring family size in two ways.

The first is a simple count of the number of dependent (under 18) children living in the household. This indicator is readily available in most data sets, and, of course, is already commonly used. To the degree that children's well-being is conditioned by the different group dynamics that operate in large families versus small families, it is imperative to take number of siblings into account.

Adult-child or parent-child ratios are recommended as a second indicator. It is important to use ratios because these indicators more precisely measure resource dilution, which also is a threat to the well-being of children. Unfortunately, it is not clear under what conditions one should use child-parent ratios instead of child-adult ratios as an indicator of available resources. Until more is known about the role other adults play in the lives of children living in complex households researchers should be wary about making assumptions that the presence of all co-resident adults equally benefit the child.

CONCLUSIONS

We began our paper with the premise that developmental processes and the course of childhood are defined by demographic processes as well as social and economic institutional arrangements. The recent burst of scholarship on the lives of children utilizing demographic perspectives, methodologies and data suggest a growing consensus that our understanding of childhood is limited without recognizing these facts. Our concern in this paper has been the measurement of three fairly neglected components of the population of children:

race/ethnicity, immigration and family size. Aside from the specific recommendations discussed above, we conclude by noting that none of the recommendations we make involve radical restructuring of our data collection enterprises or the ways researchers have commonly used these indicators. This is good. It implies that we can have reasonable confidence in what we have learned from past research using conventional practices. It also means that with appropriate sensitively to the historical boundedness and theoretical assumptions underlying the indicators, researchers can early incorporate most of the above suggestions into their assessment of children's well-being.

Endnotes

[1] While an argument might be made for distinguishing national origin groups among the Hispanics, the geographic concentrations of particular national origin Latino groups in certain cities and states, renders such a distinction unnecessary for most purposes.

[2] To be sure, this does not mean that they stop being potential competitors for parental resources, as there is a growing recognition that parental help and support to independent living adult children characterizes a significant minority of American families (Hogan, Eggebeen and Clogg 1993).

References

Bane, M. J. 1976. "Marital Disruption and the Lives of Children." Journal of Social Issues 32: 103-117.

Bernert, E. H. 1958. America's Children. New York: John Wiley and Sons.

Blake, J. 1981. "Family Size and the Quality of Children." Demography 18: 421-442.

Blake, J. 1989. Family Size and Achievement. University of California Press: Berkeley.

Bumpass, L. L. 1984a. "Children and Marital Disruption: A Replication and Update." Demography 21: 71-82.

Bumpass, L. L. 1984b. "Some Characteristics of Children's Second Families." American Journal of Sociology 90: 608-623.

Bumpass, L. L. and R. Rindfuss. 1979. "Children's Experience of Marital Disruption." American Journal of Sociology 85: 49-65.

Duncan, G. J. and W. Rodgers. 1991. "Has Children's Poverty Become More Persistent?" American Sociological Review 56: 538-550.

Eggebeen, D. J. 1988. "Determinants of Maternal Employment for White Preschool Children: 1960-1980." Journal of Marriage and the Family 50: 149-159.

Eggebeen, D. J. 1992. "Changes in Sibling Configurations for American Preschool Children." Social Biology 39: 27-44.

Eggebeen, D. J. and D. T. Lichter. 1991. "Race, Family Structure, and Changing Poverty Among American Children." American Sociological Review 56: 801-817.

Eggebeen, D. J., Snyder, T. R., and W. D. Manning. 1994. "Children in Single Father Families in Demographic Perspective." Unpublished paper, Population Research Institute, Pennsylvania Statue University.

Elder, G., and C. E. Bowerman. 1963. "Family Structure and Child Rearing Patterns: The Effect of Family Size and Sex Composition." American Sociological Review 28: 891-905.

Entwisle, D. R., and N. M. Astone. 1994. "Some Practical Guidelines for Measuring Youth's Race/Ethnicity and Socioeconomic Status." Child Development 65: in press.

Furstenberg, F. Jr., C. W. Nord, J. L. Peterson, and N. Zill. 1983. "The Life Course of Children of Divorce: Marital Disruption and Parental Contact." American Sociological Review 48: 656-668.

Glick, P. 1976. "Living Arrangements of Children and Young Adults." Journal of Comparative Family Studies 7: 321-333.

Glick, P. 1979. "Marrying, Divorcing, and Living Together in the U.S. Today." Population Bulletin 32: 5 (Population Reference Bureau).

Hernandez, D. J. 1993. America's Children, Resources from Family, Government, and the Economy. New York: Russell Sage Foundation.

Hofferth, S. 1985. "Updating Children's Life Course." Journal of Marriage and the Family 47: 93-116.

Hogan, D. P., D. J. Eggebeen, and C. C. Clogg. 1993. "The Structure of Intergenerational Exchanges in American Families." American Journal of Sociology 98: 1428-1458.

Hogan, D. P. and D. T. Lichter. 1994. "Children and Youth: Living Arrangements and Welfare." Forthcoming in State of the Union, Volume 2, edited by R. Farley. New York: Russell Sage.

Jasso, G. and M. R. Rosenzweig. 1990. The New Chosen People: Immigrants in the United States. New York: Russell Sage.

Jensen, L. and Y. Chitose. 1994. "Today's Second Generation: Evidence from the 1990 U.S. Census." Paper presented at the 1993 annual meeting of the American Sociological Association.

Kidwell, J. S. 1981. "Number of Siblings, Sibling Spacing, Sex, and Birth Order: Their Effects on Perceived Parent-Adolescent Relationships." Journal of Marriage and the Family 43: 315-332.

Kidwell, J. S. 1982. "The Neglected Birth Order: Middleborns." Journal of Marriage and the Family 44: 225-235.

Lowry, I. S. 1980. The Science and Politics of Ethnic Enumeration. Paper No. P-6435. Santa Monica, Calif.: RAND.

Manning, W. D., and D. T. Lichter. 1994. "Cohabitation and Children's Economic Well-Being". Paper presented at the annual meeting of the American Sociological Association, Los Angles, Calif.

Norris, F. D., and P. W. Shipley. 1971. "A Closer Look at Race Differentials in California's Infant Mortality, 1965-67." HSMHA Health Report 86: 810-814.

Nye, F. I., J. Carlson, and G. Garrett. 1970. "Family Size, Interaction, Affect and Stress." Journal of Marriage and the Family 32: 216-226.

Peterson, E. T. and P. R. Kunz. 1975. "Parental Control Over Adolescents According to Family Size." Adolescence 10: 419-427.

Portes, A. and M. Zhou. 1993. "The New Second Generation: Segmented Assimilation and Its Variants." The Annals 530: 74-96.

Rogers, R. G. 1989. "Ethnic Differences in Infant Mortality: Fact or Artifact?" Social Science Quarterly 70: 642-649.

Scheck, D. C. and R. Emerick. 1976. "The Young Male Adolescent's Perception of Early Childrearing Behavior: The Differential Effects of Socioeconomic Status and Family Size." Sociometry 39: 39-52.

Sweet, J. 1974. "The Living Arrangements of Children." Working Paper 74-28. Center for Demography and Ecology, University of Wisconsin-Madison.

Tienda, M. and R. Angel. 1982. "Determinants of Extended Household Structure: Cultural Patterns or Economic Need?" American Journal of Sociology 87: 1360-1383.

Tienda M. and R. Angel. 1985. "Household Structure and Labor Force Participation of Black, Hispanic, and White Mothers." Demography 22: 381-394.

U.S. Bureau of the Census. 1974. Consistency of Reporting of Ethnic Origin in the Current Population Survey. Technical Paper No. 31. Washington, D.C.: U.S. Government Printing Office.

FAMILY STRUCTURE, STABILITY, AND THE WELL-BEING OF CHILDREN

Gary D. Sandefur
University of Wisconsin-Madison

This paper was prepared for presentation at the conference on "Indicators of Children's Well-Being," held November 17-18, 1994 at the Hughes Foundation Conference Center, the Cloister, Rockville, MD. The conference was sponsored by the Office of the Assistant Secretary for Planning and Evaluation in the U.S. Department of Health and Human Services, the National Institute of Child Health and Human Development, Child Trends, Inc., the Anne E. Casey Foundation, and the Institute for Research on Poverty.

Abstract

This paper reviews the availability of local, state, and national data on family structure, stability, and the well-being of children. It focuses on indicators of family structure and stability, but it also briefly reviews the literature on the effects of family structure and stability on child, adolescent, and early adult outcomes. The major themes of the paper are: (1) family structure and stability are not direct indicators of child well-being, but they are associated with many of these indicators; (2) we need to rethink the way in which we measure family structure and stability to take into account the many types of families in our society; and, (3) the study of family instability needs to pay more attention to related issues such as child abuse and neglect and foster care placements.

Family Structure, Stability, and the Well-Being of Children

The social demography of the American family has been one of the central foci in domestic population research for some time. The interest and importance of this issue is reflected in the annual publication of two current population reports--"Household and Family Characteristics" and "Marital Status and Living Arrangements"--as well as the reproduction of material from these reports in the annual Statistical Abstracts and the Green Book. Further, the U.S. Bureau of the Census publishes pages and pages of tables on marital status, family structure, and living arrangements based on data from each decennial census. In addition to the Census and annual Current Population Surveys, the federal government sponsors a number of other data collection efforts including the Survey of Income and Program Participation (SIPP) and the National Survey of Families and Households (NSFH) that accumulate more detailed data on family structure and the stability in families over time.

The interest in these issues is fueled by scientific and intellectual curiosity, but also by the knowledge that family structure and stability are related to how well families are functioning and to the extent to which they provide a nurturing situation for the children in these families. As Zill and Nord (1994: p. 1) point out, "Among the functions families are expected to fulfill are providing for the basic physical needs of their members, including food, clothing, and shelter; teaching children right from wrong, to respect the rights of others, and to value other societal institutions; and monitoring and supervising children in their daily activities to protect them from harm and to ensure that they behave according to the rules of society." Scholars and policy makers are interested in family structure and stability because they feel that these affect the ability of families to fulfill these key functions, and thus affect the well-being of children.

The major goals of this paper are to review existing local, state, and national data on indicators of family structure and stability, to examine briefly the research on the effects of family structure and stability on child, adolescent, and early adult well-being, and to suggest ways in which we might improve the quality and usefulness of our indicators. The major themes of the paper are: 1) family structure and stability are not direct indicators of child well-being, but they are associated with many of these indicators; (2) we need to rethink the way in which we measure family structure and stability to take into account the many types of families in our society; and, (3) the study of family instability needs to pay more attention to related issues such as child abuse and neglect and foster care placements.

What Do We Mean by Family Structure and Family Stability?

There is no "official" definition of family structure in social demography. But, when most social scientists use this term, they are generally referring to the marital status of the parents. A common convention in many reports on family structure is to distinguish between two parent and single parent families. Some reports and studies distinguish among types of single parent families. Some studies, for example, identify single parent families headed by men and by women, and distinguish among those created by out-of-wedlock childbearing, separation, divorce, or the death of one of the parents. Less common, but still possible with the Public Use Microdata Samples from the decennial censuses and current population surveys, is the identification of extended families with grandparents and other adult relatives in the same household. Although these data do not permit the assessment of extended family relationships that involve individuals that are not residing together, ethnographers have attempted to examine these aspects of family structure.

Family stability is generally defined in terms of changes in the marital status of the parents. Most often, when social scientists discuss family stability, they are referring to divorce or separation. Other types of family stability include marriage for previously never married parents, remarriage for divorced individuals, and changes in extended family residential patterns and relationships. The availability of prospective or retrospective family residential histories in data sets such as the National Survey of Families and Households (NSFH), the National Longitudinal Survey of Youth-1979 cohort (NLSY), and the Panel Study of Income Dynamics (PSID) have allowed researchers to examine the stability of family structure over time, at least at the national level.

We know less about some of the other indicators of family stability. We now have, for example, valid and reliable scales of family violence, conflict, and home environment (Daro, 1994; National Research Council, 1993). Some national surveys have included some of these scales, but in general, these scales have been used most often with local and not necessarily representative samples. Another area in which data collection is clearly inadequate, but in which there are signs of improvement, is the collection of data on the three major types of child abuse (emotional, physical, and sexual), child neglect, and experiences with foster care (Courtney and Collins, 1994; Daro, 1992; Goerge, Wulczyn, and Harden, 1994; Green Book, 1993; National Research Council, 1993).

Plan of Attack

I begin by briefly reviewing what we know about the effects of family structure and family stability on child well-being. To do this, I borrow extensively from McLanahan and Sandefur (1994), and also draw from recent reviews by Hernandez (1986; 1993) and Seltzer (1994). Second, I discuss widely used indicators of family structure and stability and examine how these indicators are collected and published at the local, state, and federal level. Finally, I recommend some changes in the data that we collect and report on family structure and stability.

II. A BRIEF REVIEW OF RESEARCH ON THE RELATIONSHIP BETWEEN FAMILY STRUCTURE AND STABILITY AND DIRECT INDICATORS OF CHILD WELL-BEING

A. Why It Is Important to Measure Family Structure and Stability

We would not be concerned with family structure and stability at a conference on child indicators unless there was some scholarly support for a connection between family structure and stability and the well-being of children. Many of us who study family structure and stability and its effects on children, adolescents, and young adults emphasize the fact that family structure is *not* a direct indicator of how well children are doing. That is, most of us would not say that a child in a two-parent family is necessarily doing better than a child in a one-parent family, whereas we would say that a healthy child is doing better than an unhealthy child. Many of us, however, believe that family structure does affect child well-being and that it does so through its influence on family functioning.

My discussion of the association between family structure and child well-being draws heavily from McLanahan and Sandefur (1994). We argue that children benefit from their parents and other family members in many ways, including benefitting from intellectual stimulation and from knowing that working hard and getting a good education will pay off in the future. Knowing this is facilitated by having a close relationship with a parent who is committed to helping his or her children and who is able to supervise their activities. Further, parents in our society bear primary responsibility for making sure that their children's needs are met. Parents determine how much money is devoted to the development of children, and they provide guidance and supervision. They also provide connections to other adults in the community, schools, and labor market that are crucial in the development of children and in the opportunities that are available to them at different points in their lives. When one parent is forced or voluntarily chooses to do this alone, these processes and connections are weakened. This occurs primarily through a loss of *economic*, *parental*, and *community* resources.

Information from the Census, CPS, and other data show clearly that one-parent families have considerably fewer *economic* resources than two-parent families. In 1992, approximately 45 percent of families with children headed by single mothers had incomes below the poverty line, as compared with 8.4 percent of families with children headed by two parents (U.S. Bureau of the Census, 1993). Not all of the difference in income is due to the consequences of divorce or a decision to bear a child out-of-wedlock. But, our research and that of other social scientists has clearly shown that divorce and out-of-wedlock child-bearing do substantially reduce the income of custodial parents relative to what it would be if they were married. A number of factors create this situation. Among them is that many noncustodial fathers do not pay adequate child support.

The absence of a parent also leads to lower access to parental resources. Fathers who live in separate households see their children less often. Interacting with a former spouse and maintaining a relationship with a child who lives in another household can be very difficult and painful. Many fathers respond by reducing the amount of time that they spend with their children or disengaging completely (Wallerstein and Kelly, 1980). Family disruption also alters the mother-child relationship. Most single mothers are forced to fill multiple roles simultaneously, without adequate support. Some experience high levels of stress and become anxious and depressed (McLoyd and Wilson, 1991; McLeod and Shanahan, 1993; Hetherington, Cox, and Cox, 1978). This can lead to inconsistent and ineffective parenting.

In families where the mother remarries or cohabits with an adult male, the quality of parenting is still likely to be lower than in families with two biological parents. From the child's point of view, having a new adult move into the household creates another disruption. Rather than assisting with the responsibilities of parenting, stepfathers sometimes compete with the child for the mother's time, adding to the mother's and the child's level of stress.

Finally, residing in a one-parent family can lower access to community resources. This occurs partially through income, i.e., families with more income can afford to live in communities with better facilities such as day care centers, schools, parks, and community centers. Another reason for the connection between family structure and community resources is the higher residential and geographical mobility of children with divorced and separated parents relative to those with two parents (McLanahan, 1983; Haveman, Wolfe, and Spaulding, 1991; Speare and Goldsheider, 1987). When parents and children live in a community for a long time, they develop close ties that provide emotional support as well as information about the broader community. When a family moves from town to town or from neighborhood to neighborhood, these ties are undermined and often destroyed.

In our view, then, family structure affects the economic resources of children, the parental resources available to them, and the community resources to which they have access. These in turn affect direct measures of child and later adult well-being, such as social and emotional adjustment, educational attainment, family formation, and labor force participation. As Hernandez (1993) points out, children who live with one parent or with a parent and step-parent suffer disadvantages relative to those in intact families in terms of economic circumstances, psychological functioning, behavior problems, education, and health.

B. The Effects of Family Structure on Social and Emotional Adjustment

Much of what we know about the effects of family structure on the social and emotional well-being of children comes from studies of the aftermath of divorce. We know less about the effects on social and emotional well-being of growing up in a family unit created by out-of-wedlock childbearing. As Seltzer (1994) points out, we should think of divorce as one among several possible risk factors for social and emotional maladjustment: "Some children show no ill effects. As in medical research on risk factors in illness, studies about the effects of divorce are useful for predicting differences between categories of people but cannot address directly whether a specific individual will be harmed by divorce" (p. 239).

Three aspects of parental resources that are critical in the social and emotional development and adjustment of children are often involved in divorces. First, the conflict between the mother and father itself affects the social and emotional well-being of the children. In fact, research has shown that children who live in two-parent families characterized by high conflict between the mother and father experience similar adjustment problems to children who live in single-parent families (Hanson, 1993; Peterson and Zill, 1986). Conflict between parents often continues after divorce and continues to affect the children.

Second, children generally feel a huge sense of loss following a divorce (Wallerstein and Kelly, 1980). They become very concerned about who will provide their care.

Third, the parenting style of the custodial parent, generally the mother, is altered by divorce, especially in the short run. The parenting practices of the custodial mother are more erratic during the first couple of years following a divorce (Hetherington et al. 1982).

Divorce, then, through its association with conflict, its effects on children's perceptions of the stability of their lives, and its effects on the parenting style of the mother, leads to short-term anxiety, depression, and disruptive behavior in children (Chase-Lansdale and Hetherington, 1990). Although the research is clearer and more compelling regarding the short-run effects, Zill et al. (1993) found some evidence that these effects persisted over the childhood of individuals. Further, there is additional evidence that multiple transitions, such as remarriage and subsequent divorces, can create even more harm (Amato and Booth, 1991; Furstenberg and Seltzer, 1986).

C. The Effects of Family Structure on Educational Attainment

I again will rely heavily on McLanahan and Sandefur (1994) for my discussion of the effects of family structure on educational attainment, family formation, and labor force participation. I compare outcomes for two-parent and one-parent families, where the group of one-parent families includes families with step-parents, and in which the differences are adjusted for race, sex, mother's education, father's education, number of siblings, and place of residence. I note the extent to which some of these differences are due to income, parental resources, and community resources.

Family structure and instability affect educational attainment through their effects on income, parental resources, and community resources. Income affects the quality of schools that children attend through its effect on the neighborhoods in which people can live and the ability of parents to send their children to private schools. Income also affects whether or not parents can afford to pay for lessons after school and whether they can take their children on trips or send them to camps during the summer.

The lower amount of parental time available to children in single-parent families also affects school achievement. Nonresident parents are generally not involved in the day-to-day rituals of homework and studying for tests, and the resident parent may be so busy with the other tasks of managing a job and household that she does not have as much time as she would like to spend with her children.

Residential mobility may also be associated with the relationship between family structure and educational attainment. Families that have lived in neighborhoods for fairly short periods of time are less familiar with the after-school resources and activities than families that are longer term residents. The loss of economic resources, parental resources, and community resources my lead children to invest less in themselves by reducing their motivation or expectations.

One major indicator of educational attainment is high school graduation. Only 15 percent of young adults fail to graduate from high school by the time they reach adulthood (U.S. Bureau of the Census, 1991). Our results showed that among those in the National Longitudinal Survey of Youth, 13 percent of children from two-parent families dropped out of high school while 29 percent of children from one-parent families dropped out of high school. The results were similar in analyses with data from the Panel Study of Income Dynamics, the High School and Beyond Survey, and the National Survey of Families and Households.

Additional analyses with the High School and Beyond Study showed that children from one-parent families had significantly lower achievement test scores, college expectations, grade-point averages, and school attendance. Further, results show that among high school graduates, those from one-parent families are less likely to attend college than those from two-parent families. And, among those who attend college, those from one-parent families are less likely to graduate than those from two-parent families. The differences in college attendance and college graduation are smaller than the differences in high school graduation.

When we include measures of income and income loss in the analysis, we find that income accounts for about one-half of the difference in the rates of dropping out of high school and also many of the other indicators of educational attainment. Although the effects of parental resources and community resources are not as powerful as those of income, they also account for a substantial proportion of the association between family structure and educational attainment.

D. The Effects of Family Structure and Stability on Family Formation

Family structure can affect early family formation via two routes. First, residing in a single-parent family lowers family income, which reduces a young woman's expectations that she will be able to continue with her education beyond high school. If young women perceive that they have few opportunities for education or interesting careers, the incentives to delay child-bearing are not very strong. In these cases, early marriage and/or early child-bearing are not seen as the detrimental events that they might otherwise be.

Second, residing in a single-parent family lowers parental resources and community resources. This means that the resident mother may be less able to monitor and constrain her children's behavior than are two parents. This leads to increased opportunities for the children to engage in irresponsible sexual activity, where "irresponsible" refers to unprotected sexual intercourse and the failure to financially support a child once it is born.

We compared the rates of teen out-of-wedlock childbearing and teen marital childbearing from women from one-parent and two-parent families using data from the NLSY, PSID, HSB, and NSFH. Again, we adjusted these differences for race, sex, mother's education, father's education, number of siblings, and place of residence. The results from the NLSY reflect what we found in the other data sets. Among women from two-parent families, 5 percent had a teen marital birth and 6 percent had a teen out-of-wedlock birth; among women from one-parent families, 14 percent had a teen marital birth and 13 percent had a teen out-of-wedlock birth. In sum, women from one-parent families are more likely to have a teen birth, and more likely to have a teen birth out-of-wedlock. Although men are much less likely to become teen fathers than women are to become teen mothers, living in a one-parent family increased the likelihood of becoming a teenage father in analyses using data from the NLSY, PSID, and NSFH, but not from the HSB. Again, a good deal of these differences can be accounted for by differences in income, parental resources, and community resources.

E. Labor Force Participation

One would expect family structure to affect labor force participation partially through its effects on education, i.e., individuals from one-parent families achieve lower levels of education and thus will be less successful in the labor market. But, there are also other ways in which family structure can affect labor force participation. Many jobs are found through networks and local connections. The presence of two parents means that the child can rely on two people to provide connections, two people to provide advice on how to seek a job, and two people to consult with during the process of looking for a job. Children in one-parent households may have only one working parent with whom to consult, and this parent may have very little time to be concerned with the employment of her child. In some cases, children in single-parent families have no working parents with whom to consult.

The lack of community resources also weakens children's connection to the labor force. Children who live in very poor communities where many adults are jobless and on welfare have less information about how to find a job than children who live in prosperous communities. Children whose families have moved several times will have fewer contacts in their current neighborhood to use in searching for a job than children who have lived in one neighborhood for much of their childhood.

To examine the effects of family structure, family stability, income, parental resources, and community resources on labor force participation, we used idleness, defined as not being in school and not working, as the outcome measure. Our results showed that young men from one-parent families were about 1.5 times as likely to be idle as young men from two-parent families in each of the four data sets (NLSY, PSID, HSB, and NSFH) that we used. This was true whether we looked at all young men or just at those who had completed high school. Further, evidence from the NLSY suggests that even between ages 23 and 26, young men from disrupted families are more likely to be idle than are young men from two-parent families. As with educational attainment and early family formation, a good deal of these differences are due to income, parental resources, and community resources.

F. Summary

In sum, a good deal of evidence suggests that family structure and stability are associated with direct indicators of child and later adult well-being such as social and emotional adjustment, educational outcomes, family formation, and labor force participation. These associations occur through the impact of family structure and stability on family functioning. Consequently, our understanding of the well-being of children in our society is enhanced by our knowledge of the types of families in which they live and the stability of their family lives during childhood.

III. MEASURES OF FAMILY STRUCTURE AND STABILITY

A. Family Structure in the Household of Residence

The Census and the Current Population Surveys are the most widely used sources of information on family structure in the household of residence. In the Census and the Current Population Surveys, what we know about family structure is based on questions about marital status (married--spouse present, married--spouse absent, widowed, divorced, separated, never married) and relationship to the householder or reference person. Using these data, one can identify children who are living with a married couple, a married adult whose spouse is absent, or a single adult who is widowed, divorced, separated, or never married. A researcher can also determine if the child is a natural/adopted child, step child, grandchild, brother/sister, other relative, foster child, partner/roommate, or nonrelative of the householder.

If there are two unmarried adults in the household, one can use the relationship to the reference person to determine if the other adult is a parent, brother/sister, other relative of the reference person, non-relative, or partner/roommate of the reference person. In the 1990 Census, the question on relationship to the reference person permits one to identify individuals who are cohabiting with the reference person rather than inferring this from the partner/roommate response.

Although these pieces of data permit the identification of several alternative family types, some types of families in which researchers and policy makers are particularly interested cannot be identified. First, we cannot identify children who are living with two biological parents who are not married to one another. We can determine if a child is living with one biological parent who is cohabiting or partnering with another adult, but we do not know if the other adult is also a biological parent. Since this is an increasingly common, though still relatively rare, situation in American society, we could benefit from having such information.

Second, we cannot always distinguish between children who are residing with two biological/adoptive parents and one biological and one step parent. We can do this if the step parent is the reference person. But, if the biological parent is the reference person and the step parent is not, the data in the Census and the Current Population Survey do not permit us to determine that a step parent is in the household. Again, this is an increasingly common family arrangement in our society, and one that has consequences for children, so we could probably benefit from having such information available from the Census and CPS data.

Other data sets allow us to identify children who are living with one biological parent and one step-parent. Sandefur, McLanahan, and Wojtkiewicz (1992) found that in the National Longitudinal Survey of Youth, 5 percent of the respondents aged 14-17 resided with a step-parent throughout the period in their lives from age 14 to 17. The percentage who are residing with a parent and step-parent at a particular point in time would be even higher. The High School and Beyond Survey, the National Survey of Families and Household, and the Panel Study of Income Dynamics all permit researchers to identify individuals who reside with a parent and step-parent.

B. Family Structure outside the Household of Residence

A number of researchers over the years have argued that extended families, most generally defined as multigenerational families, play important roles in the lives of some children. The Current Population Surveys and the 1990 Census permit the identification of households in which some grandparents or other adult relatives reside. The data allow us, for example, to determine if a child is residing with a grandparent who is the householder or if the child is residing in a household in which a parent or other adult relative of the householder is present. Information from the 1993 March Current Population Survey shows that 5 percent of the children under 18 in the United States were living in the home of their grandparents. Approximately 1.5 percent of children under 18 were living with a grandparent with no parent present in the household. The percentage who reside in the home of a grandparent varies with race and ethnicity: 12 percent of Black children, 6 percent of Hispanic children, and 4 percent of white children resided in the home of their grandparents (Saluter, 1994).

The Census and the CPS do not allow us to examine the structure of relationships with parents, grandparents, or other adult relatives who do not reside in the household. Ethnographers and other researchers have argued for some time that such relationships are an important aspect of family structure, and that data from the Census and CPS provide a somewhat misleading picture of family structure.

Given the mobility of the American population, relationships with grandparents and other adult relatives outside the household may be less common now than they were several years ago. That is, children may be less likely now than thirty years ago to live in places where regular contact with such relatives is a regular occurrence. This is an empirical question, of course, but one on which we have very little systematic information.

One important type of relationship that goes beyond the household of residence is, however, probably more important now than several years ago--the relationship with a noncustodial parent. Data from the Child Supplement of the National Longitudinal Survey of Youth, the National Survey of Families and Households, and other sources suggest that some children have regular contact with a noncustodial parent. The structure of these relationships is in some ways shaped by the legal custody arrangements that accompany divorce, but children may also have relationships with a noncustodial parent who was never married to the custodial parent.

Relationships with adult relatives outside the household are very complex, and it is too much to expect the Census and the CPS to capture all of the qualities of these relationships. A legitimate issue to pose is whether it is worthwhile to ask some basic questions in the Census and the CPS about relationships with relatives outside the household. Such questions might explore legal custody arrangements for noncustodial parents, the proximity of noncustodial parents and other adult relatives, and the amount of time that children spend with these individuals. These questions would complement the existing information on living arrangements.

C. Family Stability

Several national data sets that are used to study children now include information on family stability during childhood. This information is sometimes prospective (e.g., the Panel Study of Income Dynamics and the Survey of Income and Program Participation) and sometimes retrospective (e.g., the National Survey of Families and Households and the National Longitudinal Survey of Youth).

In order to collect prospective information on family stability, one must follow children from birth through their childhood to the time when they leave home to establish their own households. The Panel Study of Income Dynamics allows us to do this because it has followed the same families and offspring from those families since 1968. Each year the PSID asks a series of questions that allows researchers to determine with whom children are residing. Researchers can compare this information across years to determine whether the living arrangements of children have changed, how often these arrangements have changed, and how many years children have resided in various kinds of living arrangements. Since the data are based on with whom one is living at the time of the survey, changes that occur during the year between surveys are not necessarily observed. If one parent leaves the household after one data collection point, but returns before the next data collection point, the PSID would not record this as a change in living arrangements.

An advantage of the prospective data in the Survey of Income and Program Participation is that it does record changes during a year. The disadvantage of the SIPP is that the children are observed for a much shorter period of time than during the PSID, so one cannot track family stability and instability throughout childhood.

Both the National Survey of Family and Households and the National Longitudinal Survey of Youth collect retrospective data on living arrangements at specific ages. These data are obtained by asking people to specify with whom they were residing at birth and then ages 1 through 19. Wojtkiewicz (1992) used the data from the National Survey of Families and Households to explore the nature of changes in family structure during childhood. He reported that "The general pattern is that children start out at birth in either mother-only or mother/father families. As the cohort ages, the percentage in mother-only and in mother/stepfather families increases, while the percentage in mother/father families decreases. The percentages living with father only or with father and stepmother are not large at any age. Among non-Hispanic whites, living only with grandparents or other relatives is not common. Among blacks, however, a noticeable percentage of children live only with grandparents" (Wojtkiewicz, 1994: p. 61).

The work of Wojtkiewicz and others has provided us with a much more complete picture of family instability than we previously had from data on family structure at particular ages or particular points in time. We do not yet know, however, what aspects of family instability we are missing by using yearly data on with whom children are residing.

Measurement of family instability during a year is especially important if one is interested in examining experiences with foster care. Although being in foster care is a relatively rare experience in American society, the percentage of children in foster care continues to increase. Further, experience in foster care is an indicator of extreme family instability. In 1992, 1.4 percent of children in New York, .9 percent of children in California, 1 percent of children in Illinois, .5 percent of children in Michigan, and .2 percent of children in Texas were in some form of foster care placement at any given point during the year (Goerge, Wulczyn, and Harden, 1994). During the 1988-1992 period, the average duration for a first placement in foster care ranged from 9.2 months in Texas to 30.1 months in Illinois (Goerge, Wulczyn, and Harden, 1994). One may miss a number of foster care placements if one is relying solely on annual data on living arrangements.

D. Child Abuse and Neglect

Indicators of extreme family instability other than foster care include child abuse and neglect. Few national data collection efforts include questions on child abuse and neglect. In the case of the Census, the CPS the SIPP, and the PSID, it would be inappropriate to ask a householder if he/she or any other adult in the household has abused or neglected a child. It would also be difficult to ask a youth residing with a parent in the NLSY, HSB, or NSFH if they had experienced abuse or neglect.

The incidence of child abuse and neglect appears to be increasing in American society (Panel on Research on Child Abuse and Neglect, 1993). This National Academy of Sciences Panel reported that "From 1976, when the first national figures for child maltreatment were generated to 1990, the most recent year covered by the National Child Abuse and Neglect Data System, reports of maltreatment have grown from 416,033 per year (affecting 669,000 children) to 1,700,000 per year (affecting 2,712,917 children) (NCCAN, 1981, 1988, 1992)." The Panel notes, however, that the meaning of this increase is not completely clear because of the limitations of the data and likely increases in the reporting of incidents.

One might question whether a consideration of abuse and neglect has a place in assessing family structure and stability. Abuse and neglect are indicators of the functioning of families and are associated with family structure and stability, but are they really measures of family structure and stability? My view is that even if one considers child abuse and neglect to be measures of family functioning as opposed to measures of family instability, one cannot understand family structure and stability without understanding the role of child abuse and neglect in American society.

Research on child abuse and neglect has arrived at a convention of distinguishing among four distinct phenomena: (1) sexual abuse; (2) physical abuse; (3) emotional maltreatment; and, (4) neglect (Panel on Research on Child Abuse and Neglect, 1993). Although researchers generally agree that the incidence and prevalence of these has increased over time, we have relatively poor information on their actual occurrence in our society. There are many problems to be overcome in order to get better information, but a number of suggestions for improvement exist in the literature.

One can also ask whether existing national data collection efforts on children and families can ask worthwhile questions about these phenomena. The National Academy Panel on Research on Child Abuse and Neglect summarizes some of the results of studies of self-reported sexual abuse. The recent "sex" survey carried out by the National Opinion Research Center apparently asked a retrospective question about sexual abuse as a child and found that responses to this question were associated with adult sexual behavior. Straus and Gelles (1986) report the results of asking questions in two nationally representative surveys about physical abuse and verbal forms of emotional maltreatments. These questions are part of the Conflict Tactics Scale, a scale with known desirable statistical properties. There are developed questions and scales, then, which appear to allow us to examine these issues in national surveys.

E. Major Regularly Published Reports on Family Structure and Stability

Part of the charge of this paper is to review reports on family structure and stability. I address this by briefly discussing the Current Population Reports and two recent examples of reports by nongovernmental organizations.

The U.S. Bureau of the Census currently publishes each year two major reports on family structure. These are both based on the March Current Population Survey. One is entitled "Marital Status and Living Arrangements" and the other is entitled "Household and Family Characteristics." In addition, the Bureau periodically publishes special reports using data from the Current Population Surveys, the decennial census, or the Survey of Income and Program Participation. The two regularly published reports are among the most widely used documents published by the federal government.

The major difference between the two annual publications is that "Marital Status and Living Arrangements" uses people as the major unit of analysis, while "Household and Family Characteristics" uses households or families as the major units of analysis. For the purposes of assessing the family structure of children in our society, "Marital Status and Living Arrangements" is most useful since it provides information on living arrangements in March of the reference year for children in general and children in different social groups (e.g., race and ethnic groups, age groups, and gender). "Household and Family Characteristics", however, provides important supplemental information since one can use the tables in it to examine the characteristics of families with children.

I have noted what I consider to be the major weaknesses of these reports above, i.e., the lack of information on step-parents, cohabiting biological parents, and relationships with noncustodial parents. Given the importance of these reports to the research and policy communities, we need to give serious thought to efforts to overcome these short-comings. In addition, at some point, the CPS will have to modify its sample to include a larger sample of, and these reports will have to provide information on, the Asian population in our society. It is probably too much to hope that the CPS would permit collection of , and these reports would some day include, data on the American Indian population. Until changes are made, researchers and the policy community will have to rely on reports from the decennial Census on Asians and American Indians, as well as on specific ethnic groups within the broad Hispanic and Asian categories.

One cannot expect the Census Bureau to report each year on family structure at the local and state level, but the Bureau does produce such reports from each decennial Census. It is possible, however, to use the data from the Current Population Surveys to produce estimates of types of family structure at the state level each year. A number of nongovernmental organizations over the years have used Census or CPS tables or Public Use Samples to prepare their own reports on local areas or states. These include the National Center for Children in Poverty, and the Children's Defense Fund, as well as the Anne E. Cases Foundation, one of the sponsors of this conference.

The "Kids Count Data Book: State Profiles of Child Well-Being," prepared under the direction of William P. O'Hare, uses the 1983 through 1993 March Current Population Surveys to estimate the percentage of children who are in single-parent families in each state in 1985 through 1991. This is accomplished by computing five year averages for each state. The report indicates that there is considerable variation across states in the percentage of children who live in single-parent families. For example, twenty five percent of children in the United States lived in single parent families in 1991, but the range was from 14.4 percent in North Dakota to 57 percent in the District of Columbia (Kids Count Data Book, 1994). This illustrates the diversity in family structure across the country, but as the authors acknowledge, this disguises racial and ethnic, and local diversity in family structure within the states. Still, it is a model for what one can do with the data from the Current Population Surveys.

IV. RECOMMENDATIONS FOR IMPROVING OUR INDICATORS OF FAMILY STRUCTURE AND STABILITY

A few important assumptions bear repeating: family structure and stability are not direct indicators of child well-being. They are, however, associated with many, if not all, of these direct indicators. Further, our understanding of how children are doing in our society is not complete without a good picture of family structure and stability. Given these assertions or assumptions, the research and policy communities could benefit from modifying the way in which we measure family structure and stability.

Recommendation 1: Modify the way in which family structure is measured in the Census and the Current Population Surveys.

The nature of the American family and the prevalence of different types of families have changed dramatically during the past several years, and the decennial Censuses and the Current Population Surveys need to change to reflect this. First, the data should allow researchers to identify individuals who reside with one biological parent and one step-parent. This is becoming an increasingly common family arrangement in American society, and research suggests that residing with a step-parent and parent is a much different situation than residing with two biological parents (McLanahan and Sandefur, 1994; Sandefur, McLanahan, and Wojtkiewicz, 1992).

Second, the data should allow researchers to identify families in which the child is residing with two cohabiting biological parents. Again, research suggests that this is an increasingly common experience for children. As of yet, we know little about the association of this type of family structure with various child outcomes.

Third, the data should provide some information on one critical aspect of family structure outside the household of residence, and that is the relationship with the noncustodial parent. Residing with one parent has become increasingly common in our society, and research suggests that the relationship with the noncustodial parent may be an important factor in the social and emotional development of children. Yet, we know very little about the nature of these relationships. The Bureau of the Census should explore asking two basic questions: one question on the geographical proximity of the noncustodial parent and a second question on the frequency of contact with the noncustodial parent.

Recommendation 2: Collect monthly family residential histories in national surveys of families, children and youth.

The availability of prospective family residential histories in the Panel Study of Income Dynamics and retrospective family residential histories in the National Longitudinal Survey of Youth and the National Survey of Families and Households has permitted us to begin to explore the consequences of family instability for children during their childhood and later in their lives. These histories, however, miss some short-term changes in living arrangements that might be critical factors in the social and emotional development and adjustment of children. The incidence of living with grandparents or other adult relatives, for example, may be much higher than we currently observe in the CPS or in data based on yearly histories. A family characterized by a high degree of conflict or other problems may send its children to live with other relatives for fairly short periods of time even though the yearly data may record no or only one or two disruptions during the lifetime of the child. These short-term disruptions may be strongly associated with the social and emotional adjustment of children, and with other outcomes later in their lives. Further, monthly residential histories would permit us to observe the residential patterns of children who spend part of the year with their mothers and part of the year with their fathers.

One obvious problem with this change is that it would be more time-consuming and costly than the current yearly residential histories. Many surveys, however, currently ask monthly questions on school enrollment and employment. A careful analysis of family instability may be as important as a careful analysis of their school enrollment in understanding their lives.

Recommendation 3: Improve the information that is available on experiences with foster care, both in national surveys and through administrative data.

The March Current Population Survey currently asks questions that allow us to identify children who are residing with foster parents if those foster parents are the householder or reference person. Also, the National Longitudinal Survey of Youth and other data sets allow one to identify people who have lived with a foster parent for most of the year at a particular age. Since many placements in foster care last less than a year, monthly residential histories, such as those discussed in Recommendation 2, will yield better national estimates of experiences with foster care during childhood.

Research using the Multistate Foster Care Data Archive illustrates that administrative data, collected with the needs of the policy and research communities in mind, can be useful in understanding the incidence and prevalence of foster care experiences and the consequences of these for children (Goerge, Wulczyn, and Harden, 1994). This Archive now includes longitudinal data from California, Illinois, Michigan, New York, and Texas. Efforts are underway to expand the Archive to include other states. Data from projects such as the Multistate Foster Care Data Archive combined with better data on foster care from representative national samples of children and families will make it possible for us to understand the extent, nature, and consequences of the experience of foster care.

Recommendation 4: Improve our understanding of child abuse and neglect through including questions in national surveys on families and children, and through improving the quality of administrative data.

Improving our understanding of child abuse and neglect will be enhanced by consistency in definitions of child abuse and neglect across local areas and in developing national standards for reporting that are used consistently in all localities (Daro, 1992). In addition, scales that tap the potential of, or actual occurrence, of child abuse and neglect can be included in national surveys of families and children. The National Academy of Sciences Panel on Research on Child Abuse and Neglect points out that, unfortunately, "Research on child abuse and neglect has been severely hampered by the lack of instruments to measure the phenomena. Relatively few instruments have reported reliability and validity" (1993: p. 91). Further, those instruments with known reliability and validity generally include many items, making it very expensive to include them in national surveys.

Nonetheless, we should give some thought to trying to include some of these instruments in some of our national surveys of children and families. These instruments include the Conflict Tactics Scale (Straus and Gelles, 1986) and the Child Abuse Potential Inventory (Milner and Wimberly, 1979) for assessing the current family situation, and the Childhood History Questionnaire (Milner, Robertson, and Rogers, 1990) for examining retrospective information on experiences during the respondent's childhood.

Recommendation 5: Reports on Family Structure and Stability

This is a very brief set of recommendations. First, the U.S. Bureau of the Census should continue to issue its two major yearly reports on family structure. The reports should include information on parent/step-parent families, cohabiting biological parents, and contact with nonresident parents. Second, reports such as

Kids Count should be issued each year to provide information on family structure at the state level. Third, we need to report more systematically on child abuse and neglect and placements in foster care.

V. SUMMARY AND CONCLUSIONS

Some observers have suggested that the decline in family values and the break-up of the American family are among the major causes of other problems in American society, but the existing evidence does not suggest that this is the case. Family structure and stability, child abuse and neglect, and foster care placements increase the risk of some adverse outcomes and decrease the probability of some positive outcomes for children during childhood and later as adults. If we are to understand the condition of children in our society, we must understand their family living arrangements and changes in these family living arrangements over time.

In order to do this, we need to make some changes in the data collected by the decennial Censuses and the March Current Population Surveys. These changes are needed to take into account the transformation of the American family during the past several years. Residing with cohabiting, but unmarried, biological parents or with a parent and step-parent have become increasingly common experiences in our society. Data that do not allow us to identify these types of living arrangements are misleading. Further, these regularly collected national data should contain information on the relationships between children and nonresidential parents. The amount of contact that children in single parent families have with their nonresident parent varies widely, and research suggests variations in this contact may be associated with variations in direct indicators of child well-being.

We need to use some of our national surveys of families and children to look more carefully at family instability, foster care placements, and child abuse and neglect. Better information on family instability and foster care placement can be obtained by using prospective and retrospective monthly as opposed to yearly recording. We already collect monthly information on employment and schooling in many national data sets, and these efforts can serve as models for our efforts to collect monthly family residential histories. We should also investigate the possibility of including existing scales on family conflict and child abuse and neglect in national data collection efforts.

References

Amato, P. R. and A. Booth. 1991. "The Consequences of Parental Divorce and Marital Unhappiness for Adult Well-Being." Social Forces 68: 895-914.

Chase-Lansdale, P. L. and E. Mavis Hetherington. 1990. "The Impact of Divorce on Life-Span Development: Short and Long-term Effects." In P. B. Baltes, D. L. Featherman. and R. M. Lerner, eds., Life Span Development and Behavior. Hillsdale, NJ: Erlbaum.

Committee on Ways and Means, U.S. House of Representatives. 1993.

1993 Green Book. Washington, D.C.: U.S. Government Printing Office.

Courtney, Mark E. and Raymond C. Collins. 1994. "New Challenges and Opportunities in Child Welfare Outcomes and Information Technologies." Child Welfare LXXIII (September-October), forthcoming.

Daro, Deborah. 1992. "Building a National Child Welfare Data Base: Utilizing a Variety of Sources." Protecting Children 8, No. 3: 4-6, 24-25.

-------------. 1994. "Health Families America: A Guide for Evaluating Healthy Families America Efforts." Chicago: National Committee to Prevent Child Abuse.

Furstenberg, Frank F., Jr. and Judith A. Seltzer. 1986. "Divorce and Child Development." In P. A. Adler and P. Adler, eds., Sociological Studies in Child Development. Greenwich, CT: JAI Press.

Goerge, Robert M., Fred H. Wulczyn, and Allen W. Harden. 1994. "A Report from the Multistate Foster Care Data Archive: Foster Care Dynamics, 1983-1992." Chicago: The Chapin Hall Center for Children at the University of Chicago.

Hanson, Tom L. 1993. Family Structure, Parental Conflict, and Child Well-being. Ph.D. thesis. Madison, WI: University of Wisconsin.

Haveman, Robert, Barbara Wolfe, and James Spaulding. 1991. "Childhood Events and Circumstances Influencing High School Completion." Demography 28: 133-158.

Hernandez, Donald J. 1986. "Childhood in Sociodemographic Perspective." in Ralph H. Turner and James F. Short, Jr. (Eds.), Annual Review of Sociology 12: 159-80.

------------------. 1993. America's Children: Resources from Family, Government, and the Economy. New York: Russell Sage Foundation.

Hetherington, Mavis, Martha Cox, and Roger Cox. 1978. "The Aftermath of Divorce," in Joseph H. Stephens and Marilyn Matthews, eds., Mother-Child, Father-Child Relations. Washington, D.C.: National Association for the Education of Young Children Press.

---. 1982. "Effects of Divorce on Parents and Children." In M.E. Lamb , ed., Non-traditional Families: Parenting and Child Development. Hillsdale, NJ: Erlbaum.

Kids Count Data Book, 1994. 1994. Baltimore, MD: The Annie E. Casey Foundation.

McLanahan, Sara. 1983. "Family Structure and Stress: A Longitudinal Comparison of Male and Female-Headed Families," Journal of Marriage and the Family 45: 347-357.

McLanahan, Sara and Gary Sandefur. 1994. Growing Up With A Single Parent: What Hurts, What Helps. Cambridge, MA: Harvard University Press.

McLeod, Jane D. and Michael J. Shanahan. 1993. "Poverty, Parenting, and Children's Mental Health." American Sociological Review 58: 351-366.

McLoyd, Vonnie C. and Leon Wilson. 1993. "The Strain of Living Poor: Parenting, Social Support, and Child Mental Health," in Aletha C. Huston, ed., Children in Poverty: Child Development and Public Policy. New York: Cambridge University Press.

Milner, J. S. and R. C. Wimberly. 1979. "An Inventory for the Identification of Child Abusers," Journal of Clinical Psychology 35: 95-100.

Milner, J.S., K. R. Robertson, and D. L. Rogers. 1990. "Childhood History of Abuse and Adult Child Abuse Potential." Journal of Family Violence 5: 15-34.

National Center for Child Abuse and Neglect. 1981. "National Study of the Incidence of Child Abuse and Neglect." Washington, D.C.: U.S. Department of Health and Human Services.

--. 1988. "Study Findings: Study of National Incidence and Prevalence of Child Abuse and Neglect." Washington, D.C.: U.S. Department of Health and Human Services.

--. 1992. "National Child Abuse and Neglect Data System, Working Paper I, 1990 Summary Data Component." Washington, D.C.: U.S. Department of Health and Human Services.

Panel on Research on Child Abuse and Neglect. 1993. Understanding Child Abuse and Neglect. Washington, D.C.: National Academy Press.

Peterson, J. L. and Nicholas Zill. 1986. "Marital Disruption and Behavior Problems in Children." Journal of Marriage and the Family 48: 295-307.

Saluter, Arlene F. 1994. "Marital Status and Living Arrangements: March 1993," U.S. Bureau of the Census, Current Population Reports, Series P20-478, Washington, D.C.: U.S. Government Printing Office.

Sandefur, Gary D., Sara McLanahan, and Roger Wojtkiewicz. 1992. "The Effects of Parental Marital Status during Adolescence on High School Graduation." Social Forces 71: 103-122.

Seltzer, Judith A. 1994. "Consequences of Marital Disruption for Children," in John Hagan and Karen S. Cook (Eds.), Annual Review of Sociology 20: 235-266.

Speare, Alden Jr. and Frances K. Goldscheider. 1987. "Effects of Marital Status Change on Residential Mobility." Journal of Marriage and the Family 49: 455-464.

Straus, M. A. and R. J. Gelles. 1986. "Societal Change in Family Violence from 1975 to 1985 as Revealed by Two National Surveys." Journal of Marriage and the Family 48: 465-479.

U. S. Bureau of the Census. 1993. "Poverty in the United States, 1992." Current Population Reports, series P-60, no. 188. Washington, D.C.: U.S. Government Printing Office.

-------------------------. 1991. Statistical Abstracts of the United States, 1991. Washington, D.C.: U.S. Government Printing Office.

Wallerstein, Judith S. and Joan B. Kelly. 1980. Surviving the Breakup: How Children and Parents Cope with Divorce. New York: Basic Books.

Wojtkiewicz, Roger. 1992. "Diversity in Experiences of Parental Structure during Childhood and Adolescence." Demography 29: 59-68.

Zill, Nicholas, D. R. Morrison, and M. J. Coiro. 1993. "Long-term Effects of Parental Divorce on Parent-Child Relationships, Adjustment, and Achievement in Young Adulthood." Journal of Family Psychology 7: 91-103.

Zill, Nicholas and Christine Winquist Nord. 1994. Running in Place: How American Families are Faring in a Changing Economy and an Individualistic Society. Washington, D.C.: Child Trends, Inc.

The Influence of Neighborhoods on Children's Development: A Theoretical Perspective and a Research Agenda

Frank F. Furstenberg, Jr.
The Zellerbach Family Professor of Sociology
Mary Elizabeth Hughes

Department of Sociology
University of Pennsylvania
3718 Locust Walk
Philadelphia PA 19104-6299

Paper prepared for the conference Indicators of Children's Well-Being sponsored by the University of Wisconsin Institute for Research on Poverty, the DHHS Office of the Assistant Secretary for Planning and Evaluation, Child Trends, Inc., the NICHD Family and Child Well-Being Network, and the Annie E. Casey Foundation, Bethesda, MD, 17-18 November 1994. The authors acknowledge the helpful comments of Greg Duncan, Donald Hernandez, Christopher Jencks, Susan Mayer, Ronald Mincy and Karen Walker and the ongoing advice of Julien Teitler and Lynne Geitz. This research was supported in part by the MacArthur Foundation Research Network on Successful Adolescent Development Among Youth in High-Risk Settings. The paper reflects many ideas gained in collaborative research and discussions with committee members including Albert Bandura, James Comer, Tom Cook, Jacquelynne Eccles, Glen Elder, Del Elliott, Norman Garmezy, Robert Haggerty, Beatrix Hamburg, Dick Jessor, Arnold Sameroff, Marta Tienda and Bill Wilson.

The influence of neighborhoods on children's development has recently become a hot topic among researchers in the social sciences, largely due to the issues raised in Wilson's seminal book The Truly Disadvantaged (1987). Wilson's thesis about the devastating impact of economic stagnation and urban disintegration put poverty research back on the social science agenda. A good deal of this renewed interest in poverty has identified the neighborhood as a critical element in the reproduction of social disadvantage, echoing themes emphasized earlier in this century by Chicago school sociologists (for instance, Park & Burgess, 1924; Shaw & McKay, 1942; Tannenbaum, 1938; Thrasher, 1927). Whether and by what means the characteristics of communities influence children's well-being is not only of theoretical interest to social scientists; these questions are also immensely important to those formulating public policies addressing social inequality (Jencks & Peterson, 1991; Lynn & McGeary, 1990).

A few years ago, Jencks and Mayer (1990) surveyed the literature on the social consequences of growing up in a poor neighborhood. Into the late 1980s, they could locate only a handful of studies that met their methodological standards for providing reliable, quantitative evidence on the impact of neighborhoods on children's life chances. Moreover, virtually none of the studies in their review examined how neighborhoods affect children's lives -- that is, explored the processes by which communities shape children's development. Noting several alternative explanations of how neighborhoods could influence children's chances, Jencks and Mayer lamented the tendency of researchers to rely on a "black box" model of neighborhood effects.

It is no exaggeration to state that more studies have been completed in the past few years on the relationship of neighborhood characteristics to children's life chances than were included in the entire Jencks and Mayer review. However, though researchers have shown no lack of interest in neighborhood research, when considered as a whole the results of this new crop of studies are inconclusive (see Gephart (1994) for a recent review). Furthermore, a disappointing amount of attention has been devoted to opening the black box containing the processes by which neighborhoods influence children's lives. A skeptical reader might easily conclude on the basis of the available research that neighborhoods matter rather little, if they matter at all. Yet even the skeptic would likely agree that it is much too soon to draw any conclusions about the importance of neighborhood influences on children's development.

In this paper we assess the state of neighborhood research and suggest research strategies for furthering our understanding of the influence of neighborhoods on children's well-being. We begin by discussing the challenge of showing that development is intrinsically linked to features of the spatial context in which children grow up, identifying several theoretical orientations that suggest causal linkages between features of communities and children's well-being. We emphasize the need for a cross-disciplinary approach, as the influence of neighborhoods on children is at the intersection of several disciplines. We next briefly review existing research and discuss its limitations. We argue that in many respects existing data are not well suited to test theories of neighborhood effects, therefore further progress in understanding their magnitude and mechanisms will require original data collection. In the third section of the paper, we outline a set of issues critical to designing research on neighborhood effects. In the fourth section, we discuss approaches to measuring neighborhood, family, and individual characteristics in order to test different explanations of community influences on children's developmental trajectories. We conclude by summarizing the implications of our comments for those interested in initiating research projects concerning neighborhood effects.

THEORETICAL ORIENTATIONS ON NEIGHBORHOODS AND CHILD DEVELOPMENT

In their review, Jencks and Mayer (1990) classified the potential mechanisms by which neighborhoods may influence children's experience into four broad models. The first class, epidemic models, emphasizes the normative system that develops in enclosed communities of like-minded individuals (for instance, Case & Katz, 1991; Crane, 1991). Residents of a confined geographical space are likely to share the same attitudes, beliefs, and behaviors and hence to adopt and adhere to common ways of doing things. These sub-cultural practices develop from what criminologist Edwin Sutherland referred to as the "differential association" that typically occurs among neighbors and friends or within local collectivities (Sutherland, 1937). The more exclusively people interact with members in segregated social milieus the more alike will be their beliefs and behavior.

The epidemic model postulates the social contagion of norms or prescribed practices transmitted primarily by peers. It is distinguished from a second source of neighborhood influence which Jencks and Mayer referred to as collective socialization. The essential feature of this explanation, according to Jencks and Mayer, is the role of community adults -- not just a child's parents -- in promoting certain types of behavior to children. Socially approved of behavior is reproduced by the presence of role models and mechanisms of social control employed by adults, thereby discouraging alternative forms of behavior. This explanation also has a long and honored tradition in criminological research (See for example, Cohen (1955) and Matza (1964)).

The presence of institutional resources in the form of schools, police protection, strong neighborhood organization, and community services provides a third model of community influence on children. Jencks and Mayer argue that the benevolent intrusion of agents into the community is a potential source of influence distinguishing good and bad neighborhoods. The availability of these resources both promotes opportunity and prevents problem behavior (Cloward & Ohlin, 1960).

All three of these models predict that disadvantaged children will do better when they reside in affluent neighborhoods where presumably they have access to conforming peers, successful adult models, and abundant resources. The fourth model outlined by Jencks and Mayer suggests that the proximity of well-off neighbors may have the perverse effect of creating further problems among the less advantaged. If children perceive that they are at a disadvantage relative to their peers, this may diminish their motivation to conform. Alternative cultures may arise that sanction deviant behaviors. Competition for scarce resources may also limit the chances of the less advantaged with respect to the more advantaged. Finally, poor children could be at a comparative disadvantage in neighborhoods where they are in the minority if they are subject to negative labeling by their more affluent peers (Lemert, 1951; Clinard, 1964).

The processes that Jencks and Mayer identify need not be viewed as discrete or alternative mechanisms of neighborhood influence. Rather, they could be complementary processes. Theoretical orientations within sociology that posit links between children's well-being and characteristics of the spatial communities in which they grow up typically include several of these mechanisms.

One such theoretical orientation is social disorganization theory, which originated with the insights of Shaw and McKay (1942) and has since been elaborated by others (Bursik, 1988; Kornhauser, 1978; Sampson & Groves, 1989). Shaw and McKay's interest was in explaining the existence and persistence of ecological patterns in rates of delinquency and crime. Based on their empirical finding that areas with high rates of deviant behavior were also characterized by low economic status, ethnic heterogeneity, and high population turnover, they argued that these conditions led to social disorganization, which in turn led to deviant behavior among individuals. The level of social organization in the community, or the degree to which residents are able to realize common goals and exercise social control, is seen as a reflection of both systems of social relationships within the community and the content and consensus of values. The structural aspects of communities identified by Shaw and McKay are expected either to promote or to inhibit social organization along these dimensions. The likelihood of deviant behavior among individuals is higher where the community is relatively disorganized, a view that encompasses several of the mechanisms discussed above. Shaw and McKay's empirical findings have been confirmed in more recent work, which has also demonstrated other ecological correlates of high rates of deviance; however, detailing and testing the intervening mechanisms remains an important topic for future research (Elliott, et al., 1994; Sampson, 1992).

Wilson's (1987; 1991) argument regarding the causes and consequences of concentrated poverty is another comprehensive theory of the influence of communities on individuals. Wilson built upon important ingredients of the Chicago School tradition regarding ecological patterns within urban areas to explain how disadvantage may be socially reproduced from one generation to the next. Differentiating his theory from alternative explanations that either rely exclusively on cultural or structural conditions, Wilson instead argued that persistent poverty is created and sustained by a unique amalgamation of economic, social, and cultural elements that are fused together creating specialized local environments. Macro-economic conditions have reduced the demand for unskilled labor and limited the chances of those less equipped by education and background to compete for scarce jobs. Institutional resources within poverty neighborhoods have declined with exit of middle-class residents seeking more desirable locations and the limited commitment of government to sustain inner-city institutions. Declining rates of marital stability due to the lack of marriageable males has decreased the availability of role models within the family. These forces have in turn permitted the spread of ghetto-specific cultural beliefs that undermine commitment to conventional norms. Children raised in these areas of concentrated poverty are therefore isolated from the conventional values and networks that would support their mainstream development.

While not specifically focusing on the influence of neighborhoods, Coleman's (1988) concept of social capital does suggest the potential importance of local communities in shaping children's life courses. Coleman uses the term social capital to refer to social relationships that serve as resources for individuals to draw upon in implementing their goals. He identifies three forms of social capital: norms, reciprocal obligations, and opportunities for sharing information. The neighborhood is clearly a potentially important reservoir of social capital (Furstenberg, 1993). Sampson (1992) has argued that the concept of social capital dovetails with social disorganization theory in that the lack of social capital is one of the distinguishing features of individuals in socially disorganized communities. The presence or absence of social capital -- or at least social capital that is useful in achieving mainstream goals -- in a community is thus a further link between the structure of communities and the development of children.

Social disorganization theory, Wilson's theory on the impact of concentrated poverty and social isolation, and Coleman's concept of social capital may be conceived as overlapping, rather than competing explanations. They each hypothesize links between the socio-economic composition of communities -- ethnic diversity, poverty rates, residential stability -- and the development of children via intervening social processes such as those outlined by Jencks and Mayer. The differences among them are largely differences of emphasis in the particular compositional features considered important and the roles of various intervening mechanisms. But they are each based on a causal framework that considers the socio-economic composition of communities the ultimate source of community influences.

While the above explanations share the view that the characteristics of the local community are a potent influence on individual experience, they place relatively little emphasis on the developing child or even the family dynamics that may contribute to children's acquisition of values, skills, and practices. They focus instead on how the community context influences the developing child more or less assuming uniformity in the response of families and children to their immediate environments. Dennis Wrong once referred to this sociological vision as "the oversocialized view of man" (Wrong, 1961).

A contrasting, but complementary, approach to community influences is taken by psychologists. Within social psychology, an important tradition of research exists that has attempted to connect community influences to the developing child. First established by Lewin (1951), applied and elaborated by Barker (1968) to the study of children, and more recently developed by Urie Bronfenbrenner and his students, environmental or contextual psychology examines the ways that parents and children organize, adapt to, and shape their immediate environments (Bronfenbrenner, 1979;1986; Garbarino, 1992; Steinberg, 1990). Psychologists have studied context as a socially constructed system of external influences that is mediated by the minds of individuals. This is not to say that environments are merely epiphenomenal -- a perspective that invites considerable opposition in some sociological quarters-- but, whatever influences local environments have on children must be seen a product of how these environments are perceived and interpreted by parents and children (cf. Medrich, Roizen, Rubin, & Buckley, 1982). In this respect, the neighborhood is very much like the family itself which, as psychologists have demonstrated, is a context where different members live in different, albeit overlapping, psychological worlds (Dunn and Plomin, 1990).

This perspective adds a further dimension to the complexity of investigating contextual influences, for it implies that in the course of growing up children encounter and respond to a changing set of environments that both affect and are affected by the child's experiences. A feature of socialization within any culture is that environments are socially arranged -- more or less deliberately -- for children's acquisition of knowledge and skills. However, especially in the adolescent years, children may be granted considerable discretion to select environments even though their elders may maintain considerable indirect control on their options. This observation closely parallels sociological and anthropological perspectives examining how social niches are both organized, discovered, and cultivated by parents and children during childhood (Thorne, 1993; Fine, 1987).

These processes proceed in tandem with the children's acquisition of knowledge, beliefs, and competencies that shape their future prospects and personal well-being.

If we apply this perspective to neighborhoods, it is obvious that community influences represent a subtle and changing blend of social and individual processes. Parents, to the extent possible, locate and select desirable environments for their children, channelling their access to favorable settings or at least segregating them from undesirable locales (Furstenberg, 1993). The parents' abilities to do so depend both on their material, social, and personal resources as well as on their skill at gaining compliance from their children (Walker & Furstenberg, 1994). Their success at implementation is also affected by characteristics of their children that make them more or less receptive to adult or peer influences. Like their parents, children actively participate in organizing their environments. Furthermore, they change in their capacity to do so as they get older and respond differently to past experiences and present circumstances.

Encounters with neighborhoods are not only shaped by parenting processes and children's experiences, but also by gender, class, and ethnicity. Like age, the child's gender is likely to result in sharply divergent experiences which modify the impact of neighborhoods on development. Girls typically are granted less autonomy and are subject to greater domestic control. Especially in low-income areas, boys often have more access to street life, and at younger ages. Thus, neighborhood influences may operate differently for different age groups by gender.

A great deal of evidence testifies to the way that social-class differences mark the character of neighborhood organization and culture (Baumgartner, 1988; Gans, 1962; Kornblum, 1974). How these features of local environments influence the developmental process has been the study of numerous ethnographic studies. It is less clear from the abundant literature on class and community to what extent neighborhoods are simply a product of class composition or take on an emergent character due to the density of particular social class groupings. Even less is known about how ethnicity alters class cultures in ways that create distinctive environments that may shape the course of children's development.

It is not only children and their families who interpret characteristics of neighborhoods. A child's residence might also affect how they are perceived by others who may influence their success, such as teachers or employers. Neighborhoods might reify or concretize race and class distinctions both internally through socialization and externally through labeling. Thus, the meaning of neighborhood distinctions may only be experienced by children as they begin to recognize their place in the social order.

Recognizing that parents and children are not passive recipients of neighborhood influence, but interact with their environments, also focuses attention on the manner in which parents and children create their environment. For instance, residential mobility is a key means by which parents choose the environment experienced by their children. Because of changes in residence, a child may be exposed to a variety of different neighborhoods while growing up. The impact of a particular community on a child will likely depend on the child's duration of exposure to the characteristics of that community, the ages at which it occurs, and, perhaps, the types of neighborhoods that precede and follow it. Even more important, residential mobility is also an important strategy that parents can and do use to select suitable environments for their children. Neighborhoods with particular constellations of characteristics -- including child outcomes -- may be created by family mobility rather than the effects of emergent properties of neighborhoods on children. In this perspective, the relationship between neighborhoods and children's outcomes is the opposite of that assumed by the mechanisms discussed above.

However, spatial communities are not merely created by the residential stability or mobility of families. Any theory of neighborhood influence assumes some degree of social interaction among members of the neighborhood. However, the quantity and quality of social interaction within a neighborhood are the result of investments in social relationships by those living in the neighborhood. Given limited resources, parents may choose not to invest in community building. Parents, especially women who are the traditional community builders, may simply be too busy with the demands of jobs and family care to devote themselves to nurturing relationships with community members (Walker & Furstenberg, 1994). Residential mobility may reduce attachment to the local community and the perceived incentive to invest in social relationships. Finally, parents may devote their attention to alternative communities, which may then become more relevant to their children's chances than the local community. Particularly important in this regard may be schools, churches, and parents' networks of kin and friends outside the neighborhood. Children themselves, especially as they grow older, may relate to alternative reference groups, such as school communities or peer groups. The extent to which these alternative groups replace neighborhoods as communities of reference depends on the extent to which they are separate or overlapping social worlds.

The agency of families in choosing their residential communities and their networks of interaction suggests that understanding the manner in which communities are formed is essential to understanding the influence of neighborhoods on children's outcomes. Whether and by what means parents are able select their neighborhoods of residence to maximize their children's well-being and the role of this mobility in neighborhood change is central to comprehending the effect of spatial communities on children's development (Tienda, 1991). Likewise, the ways in which parents trade off investments in the local community with investments in other resources such as income or alternative communities is a key aspect of the relationship of neighborhoods to children's well-being.

Given these considerations, demonstrating the "effect of neighborhoods" on children's experiences may be a far more daunting challenge than many researchers believe. If we are to demonstrate that the content and process of socialization is altered by conditions in local environments, then we must be prepared to show exactly how conditions within neighborhoods influence normative expectations, social control, links to opportunities, and exposure to dangers and how these influences vary by the child's age, gender, class, and ethnicity. Moreover, we need to be aware of the ways in which local differences will be mediated by how parents and other important figures in the child's life interpret and respond to these conditions and how the children themselves define the environment and react to those who mediate it. Any explication of neighborhood effects must also take account of the children's changing exposure to and construction of their environments as they grow older, implying a need to consider the developmental trajectories of children, rather than statuses at a single point in time. Finally, understanding of neighborhood effects must be based on an appreciation of the ways in which parents and children create their communities, through mobility and through investment in social relationships.

If neighborhoods are a significant factor in children's development, different trajectories of development should emerge in different contexts, depending on the child's characteristics and his or her experience with and exposure to the positive and negative features of local environments. When we are able to demonstrate this pattern, then and only then do we begin to approach a convincing case for the influence of neighborhoods on development.

ASSESSING EXISTING RESEARCH ON NEIGHBORHOODS AND CHILDREN

Empirical research on the links between neighborhood characteristics and children's development has made limited progress on the broad agenda described above. In part this reflects the newness of interest in neighborhood effects; despite a spate of new analyses, a critical mass of scholarship has yet to accumulate. For instance, most existing analyses of neighborhood effects focus on the adolescent, rather than the childhood, years (Gephart, 1994). The relative newness of the endeavor has also led to conceptual gaps as researchers grapple with formulating questions, especially in light of the cross-disciplinary connections which both enrich and complicate approaches to research (Cook, et al., 1994; Elliott, et al., 1994; Tienda, 1991). However, the primary impediment to progress in understanding the effects of neighborhoods on children continues to be the lack of data sources that contain information on neighborhoods, families, and children. Until recently, there were no studies explicitly designed to answer questions of neighborhood influence on parents and children (Jessor, 1993). Thus quantitative researchers have perforce had to rely on secondary analysis of existing sources of data which are not well suited to address these questions. While some existing qualitative and ethnographic studies of neighborhoods speak more directly to some of the issues that we have touched upon, this research is usually not designed to contrast the experiences of children living in different communities.

Typically, quantitative research on neighborhood effects has used existing administrative areas, usually census tracts, to represent neighborhoods. One strategy has been to link individual records from a survey with socio-demographic characteristics of the census tract in which the individual resides. Individual statuses are then modeled as a function of both census tract characteristics and individual and family characteristics (for example, Aber, et al.; 1993; Brooks-Gunn, Duncan, Klebanov, & Sealand, 1993; Clark & Wolf, 1992; Duncan, Brooks-Gunn, & Klebanov, 1994; Hogan and Kitagawa, 1985). Another approach has related aggregated data on children's outcomes to census tract characteristics (for example, Aber, et al. 1992; Coulton & Pandey, 1992; Garbarino & Sherman, 1980; Sampson & Groves, 1989; Simcha-Fagin & Schwartz, 1986).

When considered as a whole, the research utilizing these approaches has produced mixed results. Some analyses have shown correlations between census characteristics and outcomes, while in others the associations have been weak or non-existent. Interpreting the findings is complicated by differences in the neighborhood characteristics employed in different studies, as well as variations in the number and type of individual and family control variables, or in the case of aggregate level studies, the absence of individual controls. It is difficult to argue based on existing evidence that children living in neighborhoods with particular socio-demographic profiles differ in obvious ways, even controlling for individual characteristics. Thus despite the intensity of interest in neighborhood influences, the conclusion that Jencks and Mayer reached several years ago remains: quantitative research has not demonstrated a convincing association between neighborhoods and children's development, much less established the causal pathways between characteristics of neighborhoods and child development (see Gephart (1994) for a comprehensive review of recent research).

Even if the results of these types of studies were to converge to a consistent pattern of associations, they would be of limited utility in understanding the complex pathways of influence among neighborhoods, families, and children. No matter how well-executed, studies such as these can only demonstrate an association at a point in time between socio-demographic characteristics of neighborhoods and children's statuses. That is, they do not open the black box containing the causal directions between neighborhood conditions and children's lives. The inclusion of only neighborhood socio-demographic information not only obscures intervening mechanisms between neighborhoods and individuals; it also obscures the relationships among neighborhood characteristics. Both of these restrictions impede the evaluation of competing theories of neighborhood effects. The use of cross sectional data does not permit dynamic analyses of neighborhoods and children. It is thus virtually impossible to assess theories of neighborhood effects against theories that argue that observed differences in outcomes across neighborhoods are due to differential selection into neighborhoods (Tienda, 1991).

Ethnographers have taken quite a different tack from quantitative researchers in their efforts to demonstrate connections between neighborhood conditions and children's development. With relatively few exceptions, they have adopted a case example approach, examining in detail how the social organization of a particular community orders family life, socialization practices, and child outcomes. Mostly, they have relied on a time-honored anthropological practice of providing vivid evidence suggesting differences (or sometimes similarities) between them and us. Comparisons are often implicit and explanations rely more on assembling configurations of interrelated practices and their meanings (an exception is Sullivan, 1989 and Burton, Obeidallah, and Allison, forthcoming).

Much of what we know or, at least, suspect we know comes from the persuasive accounts of urban sociologists and anthropologists (for example, Anderson, 1990; Burton, 1990; Hannerz, 1969; Rainwater, 1970; Stack, 1974; Williams and Kornblum, 1994). In an impressive meta-review of a large body of qualitative research on poor and near-poor neighborhoods, Jarrett (1992) attempted to identify how the availability and quality of institutional resources, particular mechanisms of social control, and the social climate supporting conventional behavior or tolerating departures from mainstream norms. Her findings suggested that family processes and socialization practices may indeed differ across communities depending on their economic status and racial composition.

In summary, while there is no lack of real-world motivation and theoretical speculation for exploring the effects of neighborhoods on children's development, the existing body of empirical work provides little evidence for or against the effects of neighborhoods -- especially in the childhood years. Recent quantitative research on the links between neighborhoods and development has not demonstrated convincing associations between neighborhoods and development, much less addressed the particular pathways of influence by which neighborhoods influence children and youth. Ethnographic research, while providing tantalizing suggestions of community dynamics, lacks the generalizability to provide solid evidence.

Some progress in understanding the influence of neighborhoods on children may be made by continuing to link existing surveys with administrative data, especially if this work exploits the longitudinal aspects of surveys. While these models will not untangle the processes by which neighborhoods influence children's development, they may be considered a logical starting point for assessing the impact of neighborhoods on children's outcomes. Determining whether associations exist between neighborhoods of various types and children's statuses will demonstrate whether there is anything to be explained by more detailed models that do open the black box. These associative models will be most helpful when processual theories are used to guide the characterization of neighborhoods and model building. It is also important that studies estimate models both with and without available processual variables. The failure of existing research to find a consistent pattern of associations is due in part to differences across studies in the extent to which variables measuring mediating processes are included.

However, real progress in understanding the relationships among neighborhoods, families and children will require initiating research explicitly designed to address these questions (Furstenberg, 1992; Jessor, 1993). In the remainder of the paper we outline issues of design and measurement that we believe researchers need to consider in planning primary research in this area. As the most powerful tools for disentangling the effects of neighborhoods on individuals are not statistical, but conceptual, we emphasize the importance of grounding both design and measurement in theoretical orientations.

ISSUES IN DESIGNING RESEARCH TO TEST FOR NEIGHBORHOOD INFLUENCES

In this section, we discuss five issues that we believe are important in planning data collection addressing the relationship between neighborhoods and children's development. We later suggest specific research strategies that employ various combinations of these desired elements.

Multilevel Designs

The first consideration in designing neighborhood research is the need for studies to be multilevel; that is to include and analyze data on both neighborhoods and individual children within these neighborhoods. In addition, as family management strategies may be an important link between communities and children, data on family processes should be collected as well (Furstenberg, 1993; Sampson, 1992). In this framework, children may be perceived as nested within families and families within neighborhoods.

With this approach, the structure of the data mimics the structure of the general theoretical proposition that properties of communities affect families and children, enabling both logical tests of the proposition and assessments of competing explanations (Smith, 1989). The central question in neighborhood research is whether families and individuals with similar characteristics behave differently in distinct environments (Jencks & Mayer, 1990). In the absence of true experiments assigning individuals to neighborhoods at random, research designs must approximate the experimental design by comparing similar individuals living in different areas. Detailed individual and family level information is necessary to statistically examine similarities and differences in individuals across neighborhoods, while neighborhood level information is necessary to describe the properties of neighborhoods that account for any observed spatial differences. In fact, this is only a poor approximation of an experiment. But continuing evidence that families and individuals respond in pattered ways to different contexts establishes plausible evidence of neighborhood effects.

Clearly, researchers are aware of the utility of multilevel analyses, as the existing research linking census tract characteristics to individual data attests. We discuss this approach here to underscore the need to undertake projects that are explicitly designed to collect data at multiple levels.

Specification of Neighborhoods

A second consideration in designing neighborhood research is the manner in which the relevant geographic community is defined. As indicated above, most of the recent research on the effects of neighborhoods on development has used census tracts as a proxy for neighborhoods, an approach dictated by cost and convenience, rather than by empirical evidence that tracts represent neighborhoods. While census tracts may be a convenient starting point for measuring neighborhood differences, researchers must consider other ways of sampling communities that take into account local definitions of neighborhoods that may either be more or less geographically circumscribed. Census tracks clearly capture some important elements of geographical and social space, but they may not depict the neighborhood as it is experienced by residents, who may relate to smaller areas within census tracts or areas that fall outside the boundaries (Elliott, et al, 1994).

However, delineating geographic neighborhoods is difficult, because the concept of neighborhood is not precise (Chaskin, 1994). There is growing evidence that residents in close geographical proximity often do not agree on the boundaries of their neighborhood. In research undertaken by the MacArthur Network on Adolescents at Risk, very different levels of agreement among residents about the size of their "neighborhood" have been discovered. There is also evidence of large differences within census tracts on definitions of the neighborhood (Elliott, et al., 1994; Furstenberg, et al., in progress; Cook, et al., 1994). Furthermore, adults and youth -- even adults and youth in the same household -- do not necessarily share the same definition of the neighborhoods. Geographical neighborhoods are not highly relevant entities for many parents, as their ties extend beyond their neighborhood (Medrich, Roizen, Rubin, & Buckley, 1982; Wynn, Richman, Rubenstein, & Littell, 1988). Important social institutions are often located beyond the confines of the neighborhood -- however defined-- implying that many residents are weakly attached to the areas where they reside (Walker & Furstenberg, 1994). Like "family" neighborhood is a highly malleable concept full of personal meaning but often idiosyncratic and not invariably consequential for behavior. An added complication is that neighborhoods, however defined, are themselves nested in broader communities. Especially as children grow older, their behavior may reflect the influence of local labor market conditions or public policy mandates that apply to larger geographical areas.

While we offer no simple solutions to these difficult issues, we believe recognition of the ambiguity of neighborhood boundaries has several implications for designing research. First, it may be valuable for researchers planning primary data collection to do a small-scale preliminary investigation of the definitions of neighborhood that are relevant to their area of examination. Second, including several overlapping definitions of neighborhood in one study would enable comparison of relationships under different definitions (for example, Brooks-Gunn, Duncan, Klebanov, & Sealand, 1993). Third, by querying neighborhood residents about their social ties outside their residential communities, it may be possible to test the extent to which individuals within communities are relatively more or less isolated from competing reference groups that influence them and their children. Finally, researchers should be sensitive to the idea that we may not find neighborhood effects precisely because internal definitions of socio-spatial communities are so variable across individuals. These considerations are all the more important as it is likely that even new data collection efforts will have to rely on administrative boundaries, at least to some extent. Building in one or two of the first two features may permit testing the fourth possibility.

Sampling Strategies

As we have argued above, data collection will be most useful when it is conducted in a multilevel framework. However it is important that the data include both a sufficient number of neighborhoods and a sufficient number of families and children within each neighborhood to support adequate statistical tests of hypotheses. This implies a strategy whereby neighborhoods are sampled first and then families and individuals sampled within neighborhoods in a manner that yields approximately equivalent numbers of families and individuals per neighborhood.

To test hypotheses about the influence of neighborhood characteristics on children, it is necessary to perform statistical comparison of children with similar personal characteristics across neighborhoods. Since neighborhood characteristics tend to cluster together, it is impossible to disentangle the effects of particular mechanisms of influence on children without large samples of both neighborhoods and children. Moreover, as we noted earlier, it is also of interest to examine the interaction of neighborhood characteristics and family processes as they influence children, further raising the sample size demands.

Comprehensive samples of neighborhoods would also provide an opportunity for a baseline description of how much variability there actually is in neighborhood conditions (Cook, et al., 1994). Similarly, much of the interest in neighborhood effects has come out of the interest in poverty, yet it is as important to ascertain whether effects of neighborhoods exist for affluent neighborhoods as well. In particular, non-linearities or threshold levels in the effects of neighborhoods on children are important from a policy perspective (Crane, 1991; Jencks & Mayer, 1990). Finally, dense samples of families and individuals within neighborhoods would enable researchers to generate reliable measures of neighborhood characteristics by aggregating individual responses (Cook, et al., 1994).

Longitudinal Approaches

As we noted above, all of the published research on the relationship of neighborhoods to children's development has employed cross sectional data, limiting the casual inferences that may be drawn from the analyses. Longitudinal designs are called for in which neighborhoods and individuals are followed over time -- either in separate studies or, ideally, within the same study.

Neighborhood research on children has thus far tended to view neighborhoods as relatively static entities. However, neighborhoods also have developmental trajectories, and the rate and manner in which a particular neighborhood is changing may have important implications for child development. Neighborhood change might be a particularly salient force if the change is rapid and dramatic, such as gentrification or an influx of immigrants. The Chicago School tradition of research explicitly considered the influence of transitional neighborhoods on the life chances of children. To our knowledge, no recent study has mapped how changes in neighborhoods relate to the changing circumstances of children, though this notion is central to Wilson's theory of neighborhood influence (cf Tienda, 1991). In general, attention to the research traditions on community organization and change would help inform current research on the influences of neighborhoods on children (for example, Sampson and Morenoff, 1994).

At the individual level, the need for longitudinal data follows directly from our emphasis on children's development. Demonstrating neighborhood influences, we have argued, requires demonstrating the processes in the immediate milieu that affect the cumulative experience of children as they develop over time. Thus, we must attend to the slope of life course trajectories, not simply to the level of outcomes or statuses at a point in time. Such a strategy requires tracking the same individuals using repeated measures of different domains of development as they encounter distinctive neighborhood environments over time. Furthermore, one of the strongest ways of demonstrating neighborhood influence on children's development would be to link the length of exposure to neighborhood conditions to specific paths of development (Tienda, 1991). Longitudinal research would permit analyzing neighborhood effects by duration of exposure.

Perhaps most importantly, longitudinal research on both neighborhoods and individuals would illuminate the causal relationships among neighborhood change, family management processes, and children's well-being. A principal ingredient of several of the sociological theories relating neighborhoods to children's life chances is the stability of the neighborhood. This is most notable in social disorganization theory, in which residential instability is one of the main structural correlates of high delinquency rates. However, it is unclear from this association just which way the causal arrow runs. For instance, the principal competing explanation for any net differences observed among individuals in separate neighborhoods is non-random selection into neighborhoods. That is, observed differences in behavior across neighborhoods are argued to be due to the presence in separate neighborhoods of individuals with distinct, but unobserved, characteristics. The differential pattern of residence is due to the dynamics of residential mobility, as the qualities of neighborhoods attract or expel migrants with particular characteristics. However, residential mobility is also one strategy that parents might employ to obtain the environment they desire for their children. Thus there is a complex relationship between the stability and characteristics of neighborhoods and local migration, a relationship that is at least partially mediated by processes of family management. Sorting out this tangle requires longitudinal data that trace family management and mobility within the context of changing communities.

Combining Quantitative and Qualitative Approaches

As we reported earlier, most ethnographic studies have focused on documenting the influence of single communities. We believe that there is a much larger role for qualitative researchers to carry out their studies both across place and over time. Indeed, we share the view of a growing number of urban ethnographers that fieldwork can be embedded into research designs that include both systemic surveys and observations. Many researchers currently use fieldwork for hypothesis generation rather than hypothesis testing, a condescension to the potential of qualitative methods to detect and document processes that are not easily captured by survey procedures. We have at least as much hope that qualitative methods will illuminate neighborhood effects as quantitative methods, but we believe that studies employing both procedures in tandem have the greatest possibility of collecting convincing evidence of how neighborhood influences operate to affect human development.

MEASURING CONCEPTS RELEVANT TO NEIGHBORHOOD RESEARCH

In the preceding section we sketched elements of research design that are important for researchers in exploring potential neighborhood influences on child development. This section takes up how to conceptualize and measure relevant features of large communities, neighborhoods, families, and children. We devote most of our attention to issues in measuring neighborhood conditions and processes, as these are both critical to neighborhood research and conceptually under-developed. We include a short discussion of broad opportunity structures as a reminder that neighborhoods, families, and children are embedded in economic markets and local cultures that affect children's life chances. Family and child measures are routinely collected in other research; therefore we only discuss aspects that seem to us unique to the study of neighborhoods.

Measuring Broader Opportunities and Constraints

While the focus of this paper is the impact of neighborhood conditions on children, neighborhoods are themselves embedded in broader geographic communities whose properties also shape behavior. These include labor, marriage, and housing markets, levels of welfare benefits, structure of property taxes, and other similar conditions that constrain or promote local attitudes and practices. As children grow older, these conditions begin to permeate their perceptions of opportunities and shape their adaptations and decision strategies. The qualities of the broader environment may also condition the influence of neighborhood characteristics (Case & Katz, 1991). This level of community, while not as indistinct as neighborhoods, is also difficult to circumscribe. However, here we conceptualize it as the Metropolitan Area or, in non-metropolitan areas, the county.

A variety of data characterizing the demographic composition, economic climate, housing context and health and educational resources for Metropolitan Areas and counties is available from the Bureau of the Census (for example, U.S. Bureau of the Census, 1991). Other information may be more difficult to assemble, especially if the aim is to build a data set that includes all areas in the United States. Thus building a data set that includes all theoretically relevant aspects of metropolitan or county contexts is a potentially arduous task. If the aim is to characterize a specific area or county, recourse could be made to local administrative records and sources to obtain not only a characterization of the context at a point in time, but its recent history as well (for example, Coulton & Pandey, 1992).

Measuring Neighborhood Conditions, Processes, and Trajectories

Complete evaluation of neighborhood influences on children would require obtaining direct measures of all the community characteristics relevant to how one or more theories explain the influence of neighborhoods on the developing child. For instance, social disorganization theory posits a causal chain from the socio-demographic composition of the neighborhood, through the social organization of the neighborhood, to children's outcomes. Testing the theory requires measuring both neighborhood socio-demographic composition and the neighborhood social processes hypothesized to mediate its effects on children's behavior. However, researchers are only beginning to include direct measures of these social processes in tests of social disorganization theory (for example, Sampson & Groves, 1989; Simcha-Fagin & Schwartz, 1986). Including all dimensions of neighborhoods hypothesized to have effects on child development does not only enable more complete tests of theories; such a strategy also illuminates the causal structure among neighborhood-level variables, suggesting which aspects of neighborhoods are potential targets for policy manipulation.

Collecting direct measures of neighborhood conditions, processes, and trajectories involves careful consideration of the attributes of communities considered central to various theories of neighborhood influence. We specify and discuss four broad dimensions of neighborhood conditions that arise in theories of neighborhood influence. These dimensions of neighborhoods are likely to be highly inter-related. Indeed, any strong neighborhood effects are likely to occur when neighborhood conditions are favorable on many dimensions. While above we discussed the difficulty of defining neighborhoods in geographic terms, here we sidestep this thorny question and assume that the relevant unit is known. However, it must be recognized that measuring the neighborhood and measuring the properties of the neighborhood must actually occur together.

Characterizing neighborhoods requires not only greater conceptual specification; more precision in how these constructs are measured is also needed. Developing techniques to measure the properties of neighborhoods adequately is an important area for future work (Cook, et al., 1994). Reference to existing literatures in overlapping areas, for instance, community psychology and urban sociology, would be helpful both for developing community concepts and the techniques to measure them (for instance, Shinn, 1988). Careful attention to meaning and measurement is especially important in light of the methodological constraints inherent in identifying social effects (Manski, 1993).

Neighborhood Infrastructure

At the neighborhood level, local infrastructure provides the physical reality in which social life and individual development occurs. Features such as the types and quality of housing, the use and arrangement of space, and the level of deterioration are fixed over short periods of time and thus provide boundaries of community development and change. Physical characteristics may also represent important constraints to social relationships (Williams and Kornblum, 1994). For instance, an area composed mainly of rental apartments may have a very different character than one composed of owner-occupied single-family row houses. This may be due to the attributes of the people who choose to live in each area, the levels of residential mobility, the ways in which the arrangement of space fosters or inhibits social exchange, or a combination of all three. In this manner, infrastructure may be the ultimate cause of neighborhood influences on children or, alternatively, the selection of certain families into certain neighborhoods. If this is indeed the case, policy might then be fruitfully focused on changing infrastructure.

Data on infrastructure may be the simplest neighborhood-level information to assemble. In situations where tracts or other census designations are used to approximate neighborhoods, some information may be obtained from the Census of Housing, which contains extensive information on housing infrastructure. To supplement this data, or in cases where census definitions are not used, fieldworkers could directly record the physical features of neighborhoods, supplementing their observations with detailed maps and data available from local administrative sources, such as zoning boundaries and conditions of streets. Developing specific indicators would be relatively straightforward, as the concepts are concrete. For example, measures could include the percentage of various types of buildings -- row homes, apartments, detached houses; presence of open spaces such as parks or vacant lots; presence of graffiti and vandalism; presence of vacant and boarded up buildings; the distance of detached houses from each other; and even architectural details such as whether homes have porches or stoops. Combined indices may be constructed that gauge the potential for social exchange in a given combination of infrastructure.

Neighborhood Demographic Composition

As we have discussed, socio-demographic composition has been utilized by virtually all recent census-tract based studies as a general indicator of neighborhood conditions. While we have emphasized the limits of this approach, our comments should not be interpreted as an argument to leave demographic characteristics out of neighborhood analysis. In contrast, as central components of several theoretical stances they should be included. Under the rubric demographic we include several attributes of the neighborhood population: age, household structure, racial composition, educational level, income level, and mobility status. Each of these characteristics represents an aspect of the local population that may have an effect on children's well being. For instance, a neighborhood in which the local population is highly educated may provide role models for educational attainment, increasing children's attachment to school. A neighborhood with a high concentration of well-off individuals may be better able to mobilize political resources in order to defeat legislation or policy that may threaten the safety or integrity of the neighborhood. Each of these effects is the result of the demographic structure, in contrast to an effect of another type of characteristic for which demographic structure is a proxy.

Obviously, studies using census tract or other census units to circumscribe neighborhoods will have the resources of the Population Census with its myriad items describing local populations. To the extent that other definitions of neighborhoods are used, obtaining data about demographic composition may be more difficult. Responses from surveys of families and individuals may be aggregated, but if the sampling frame includes only households with children the results may be seriously distorted. Basic aspects of population structure may be calculated using small-area methods for demographic estimation (for example, Myers, & Doyle, 1990). However, this technique relies on precise information about housing composition within the area, which may not be readily available. Furthermore, utilizing this approach then confounds demographic composition with housing infrastructure. A final, but difficult, possibility is a neighborhood census.

Neighborhood Institutions

The importance of local institutions is also highlighted in theories of neighborhood effects. Wilson (1987; 1991) assigns an important role to the absence of middle-class sponsored institutions in isolating the underclass. Jencks & Mayer (1990) cite institutional resources as mechanism of socialization and social control. Neither one of these theorists specifies exactly what types of institutions may be most important to children's development. Here we distinguish two types of institutions. One represents commitment and attention from outside the neighborhood, and to some extent may link the neighborhood to the broader community. Examples of these types of institutional resources include: police protection, social welfare agencies, public health clinics, libraries, and the advocacy of local politicians. The second type of institution is indigenous to the community: local businesses, churches, community centers. Of course, especially important are any institutions who specifically target children and or their parents.

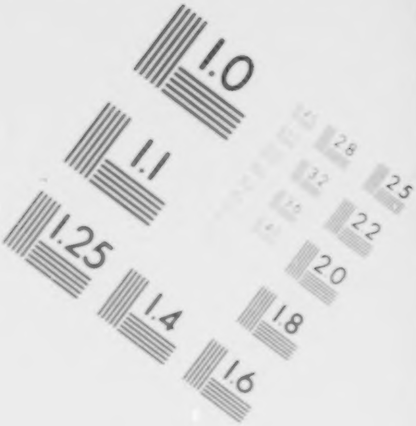
In order to assess the salience of institutions to the development of children, it would be helpful to collect two sorts of data: an objective inventory of all agencies with a presence in the neighborhood and parents' and children's perceptions and actual use of these institutional resources (Wynn, Richman, Rubenstein, & Littell, 1988). Objective presence may not matter so much as the residents' knowledge of and opinion of the salience of the institutions to their lives. For instance, knowing about the presence of a community center may not be illuminating unless the researcher also knows that residents consider it viable only for a particular ethnic group.

There are no data sources that we know of that provide inventories of institutions across various neighborhoods no matter how defined. Therefore, considering the presence of institutions requires original data collection. Listings of neighborhood institutions can be collected by fieldworkers by the combination of observation and recourse to the administrative sources suggested above for measuring infrastructure. In the case of institutions, however, interviews with local informants and leaders of institutions will be important to determine the institution's mission and actual presence in the community. Residents' knowledge of the existence and participation in institutions can be obtained by survey procedures (Cook, et al., 1994) If the survey follows the institutional inventory, it will be possible to ask respondents about particular institutions specifically.

AIIM

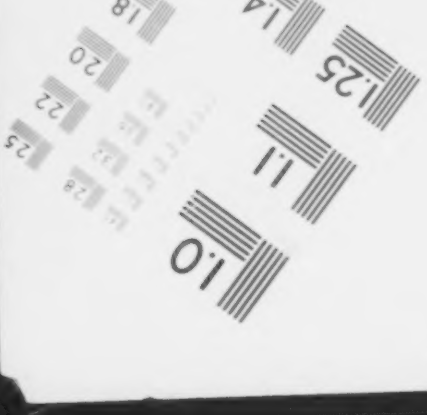
Association for Information and Image Management

1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910
301/587-8202



Centimeter
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 mm
1 2 3 4 5
Inches

1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0



MANUFACTURED TO AIIM STANDARDS
BY APPLIED IMAGE, INC.

Indicators might include the presence of specific types of institutions or a summary measure indicating the general level of institutional resources in the community. The specific institutional measure would be important to use if the institution were directly related to an outcome of interest -- for instance a family planning clinic when studying school-age childbearing -- or was directly aimed at parenting processes. Both the general and specific indicators could be discounted or inflated by data on residents' perceptions. Alternatively, aggregated measures of individual responses on awareness, use, and opinions of institutions could be used independently.

Neighborhood Social Organization

While many of the theories discussed above refer to physical, demographic, or institutional properties of neighborhoods, the fundamental expectation is that it is the qualities of the social environment that are the proximate determinants of child development. Each of the three dimensions of neighborhood life discussed thus far is anticipated to indirectly affect children's development via its effects on social relationships within the neighborhood. The mechanisms that Jencks and Mayer (1990) refer to are essentially social processes by which the content and qualities of social interaction shape the behavior of individuals. Thus measurement of concepts related to neighborhood social organization is central to advancing research on the influence of neighborhoods on children.

Along with Sampson (1992), we argue that the importance of neighborhood social organization is its role in generating social capital for individuals. Characteristic patterns of social organization in neighborhoods either facilitate or inhibit the creation of neighborhood-based social capital, which in turn affects family management and children's well-being. Coleman (1988) elaborated three forms of social capital: shared norms, reciprocal obligations, and information channels. To the extent that parents and children possess social capital in the neighborhood, the neighborhood may be more or less of an influence on their lives.

In varying degrees, neighborhoods are normative communities representing common values that are reinforced by social control. The extent to which adults and youth in the neighborhood subscribe to and promote mainstream norms is a component of several theories suggesting neighborhood effects. Networks of reciprocal obligation and exchange are particularly important to child development when they exhibit inter-generational closure, which occurs when parents of children who are friends are themselves friends. The existence of informal networks of association in the neighborhood ensures that children are monitored by adults other than their parents, facilitating collective socialization. Dense social networks within the community may also connect children to opportunities for modeling, mentoring, and sponsorship. The opportunity for information acquired in social relationships is also an important aspect of neighborhood-based social capital. The density of child contacts with adults that can offer social guidance and support is an important aspect of the child's position in the opportunity structure. This is especially the case if these adults can inform children of opportunities outside the neighborhood.

We recognize that the existence of norms, networks and information need not imply a pro-social or conventional orientation (Sutherland, 1939; Cloward and Ohlin, 1960; Sullivan, 1989). Neighborhoods can provide normative support to disengage from conventional behaviors, mentoring for criminal roles, and opportunity structures for illicit activities. Thus, studies of neighborhood influence should measure the availability of social support for underground activities or tolerance for behaviors outside the mainstream.

While social organization is the most critical element in most theories of neighborhood effects, it is also the most elusive to measure. In order to gauge the extent to which the neighborhood facilitates the formation of social capital among individuals, we need to measure the extent to which the neighborhood is a normative community, the extent to which there are informal networks in the community (and the density and closure of these networks), and the opportunities for information that exist in social relationships within the neighborhood.

Information on the social organization of neighborhoods could be gathered in either structured or qualitative interviews with individuals. In fact, a scenario in which qualitative and quantitative interviews are employed, not as alternatives or in sequence, but in a series of feedback loops would likely yield the most optimal measures of neighborhood social fabric. Utilizing individual reports, multivariate scales could be built that summarize aspects of neighborhood social organization (for example, Cook, et al., 1994). However, individual evaluations of neighborhood social organization tend to be distorted, as respondents apply internal, non-standardized yardsticks in their responses to an interviewer's questions. Assessment of neighborhood social processes by outside observers would help to correct for the difficulty that individuals have in standardizing their perception of their local environment.

Measuring Properties of the Family System

It is beyond the scope of this paper to discuss in any detail the dimensions of family systems that are relevant to the developing child. However, we would like to emphasize three aspects of family life that are of central importance to assessing the effects of neighborhoods on children and should therefore be included in any data collection efforts.

First, it is of central importance that information on residential mobility be collected, including length of time in the neighborhood, reasons for moving, and, when possible, characteristics of the previous neighborhood. In cross sectional-studies this information can be collected in a retrospective residence history; in longitudinal studies it may be collected prospectively. Second, we cannot ignore the importance of how parents relate to their local environments, how they draw upon resources in their communities, and how they manage and shape the child's milieu. Of particular importance is the degree to which parents possess neighborhood-based social capital. The neighborhood may present a favorable environment for the generation of social capital, but individual parents may or may not exploit these resources. We know relatively little about how neighborhoods influence the creation and management of social capital.

Finally, parents' ability to create and sustain a normative system in the household and generate reciprocal obligations with their children can be thought of as a form of family-based social capital. Simply put, parents who invest in their children by establishing and maintaining expectations and obligations are likely to gain a greater degree of compliance or adherence to their values. Family-based social capital has features similar to the capital that inheres in community ties. Consequently, we want to measure shared norms within the family, social-connectedness of family members as indicated by the strength and salience of bonds, and the sense of reciprocal obligations.

Measuring Children's Development

We will also not discuss what measures of child development that might be included in neighborhood studies, as there is ample information on this issue available elsewhere. However, we would like to emphasize two features of children' lives that we think are of particular importance in assessing neighborhood effects. First, it would be helpful to measure children's acquisition of social capital during childhood, for example, children' contacts, identification and respect for adults within the neighborhood, and involvement in and service to community institutions. Such measures provide an indication of the extent to which children are increasingly bonded to and regulated by norms outside the family and their ability to call upon support and sponsorship by figures other than parents. Second, many of our surveys collect data on aspirations and attainment. Yet we know relatively little about children's changing knowledge of and competency with the social world. For example, little is known about what children know about what it takes to go to college, what employers look for when they are hiring, how to obtain medical information (like getting an abortion), and the like. Such information is an important indicator of children's position in the opportunity structure.

CONCLUSION

We have argued that progress in understanding the influences of neighborhoods on children's development will require designing primary research aimed explicitly at addressing the complex questions generated by current theoretical orientations. To this end, we outlined issues of both design and measurement that we deemed important in planning such research. However, we recognize that it is impossible, and probably not desirable, to combine all the elements we suggest in a single study. Throughout our review, we have ignored the very real constraints of cost, time, and manageability. In this section we propose several types of projects that combine various features of the above desiderata. While these proposals certainly do not exhaust the possibilities, they suggest potential ways in which the elements we discussed above may be practically implemented.

While we have been critical of approaches that combine demographic information about census tracts with survey data, we recognize that this strategy is often the best available. We believe these approaches could be fruitfully elaborated in two ways. First the longitudinal nature of many of the surveys can be exploited more fully. This strategy is likely to be most informative when the study contains both census tract data over time and repeated measures of development. This conjunction of information makes it possible to calculate exposure intervals to varying contexts as well as examination of cases that migrate across contexts. The relatively low cost of augmenting existing longitudinal data sets makes this a promising strategy for several large-scale longitudinal surveys containing developmental outcomes, for instance the Panel Study of Income Dynamics, the National Longitudinal Survey of Youth, and the National Survey of Families and Households.

A second strategy that builds on the tract-survey combination approach is to add additional tract-level information to the data set, such as information on infrastructure or institutions that may be available from administrative sources. We recognize that this may well be impossible with the national data sets that include a large number of census tracts; thus this strategy may be most feasible with locally concentrated samples. If this is the case, direct observation could be used to supplement data from administrative sources. To the extent that the datasets are also densely sampled within areas, individually based measures may also be constructed. A distinct advantage of including other measures of census tract characteristics is that it permits investigators some way of testing of how demographic profiles are related to theoretically relevant features of local milieus. Again, this is a budget strategy to approaching our ideal design.

As we have argued above, new data collection aimed at disentangling the influences of neighborhoods must be multilevel and must sample at the neighborhood level first, as the unit of comparison is fundamentally the neighborhood. Elements on which more compromise is possible include the definition of neighborhood employed, whether the study is longitudinal, and the extent to which quantitative and qualitative work are combined.

A broad program of research undertaken by the MacArthur Foundation Research Network on Successful Adolescent Development Among Youth in High-Risk Settings has sponsored a series of studies that have adopted this strategy. In a number of different sites, the influence of neighborhood is being assessed by following dense samples of families and youth each of which represent a number of neighborhoods or communities with contrasting social characteristics. Several of these studies are carefully assessing the individual and added influence of families, schools, peers, and neighborhoods. (Furstenberg, Cook, Eccles, Elder, and Samaroff have been conducting a comparison of urban neighborhoods in Philadelphia. In separate studies, Cook and colleagues and Eccles, Sameroff, and colleagues are studying the influence of neighborhoods, schools, families, and peer groups on youth in Prince Georges County, Maryland. Elliot, Wilson, and colleagues are examining neighborhood influences in Denver and Chicago. Finally, Elder and colleagues (Conger & Elder, 1994) have been looking at community influences in rural Iowa.) Studying neighborhoods within a single area has not only the advantage of lower costs and ease of management; such a strategy also has the theoretically attractive property of holding broader opportunity structures constant. This type of study could include all or some of the following elements: a survey of neighborhoods that characterizes all neighborhoods in the city and that may or may not contain a component aimed at determining the boundaries of neighborhoods; dense sampling in enough neighborhoods to provide data for quantitative analysis; selecting a subset of these neighborhoods for extensive ethnographic comparison to add depth and richness to the statistical comparisons. The study could be extended to be longitudinal by tracing individuals and neighborhoods over time. Finally, a comparative dimension could be added if similar studies were being conducted in other cities. A second broad category of project would incorporate national samples of neighborhoods, selected either strategically or probabilistically. These studies would resemble the efforts of a series of Russell Sage Foundation funded studies that are examining the influence of macro-economic conditions on family life and the marital and economic transitions of young adults. The potential components would be essentially similar to those suggested for city-based studies.

Finally, too little research on neighborhood effects has capitalized on planned and natural experiments. The Gautreaux study stands as a major exception, where Rosenbaum and his colleagues examined the effects of random assignment to geographical mobility among low-income families in Chicago (Rosenbaum, & Popkin, 1992). Evaluation of different types of housing policies on families and children provides an attractive site for examining neighborhood effects on low-income families. Studies of communities in rapid transition also afford an opportunity to examine how families reaction to community change and how different cohorts of children may fare over time in different environmental conditions. Careful inspection of housing projects that undergo change may also provide another avenue to looking at the mechanisms that affect the course of children's development. Of course, these strategies require a timely awareness of local conditions and the cooperation of local players.

In closing, we note that Jencks and Mayer (1990) argued powerfully that understanding neighborhood influences on children would require a long-term commitment from both the research and funding communities. Their argument remains true today, with the added urgency that we are exhausting the possibilities of existing data without advancing our understanding of how neighborhoods influence the development of children. Significant progress in combining the rich insights of sociological and psychological theories of whether and how neighborhoods shape the course of development requires a greater commitment to designing and executing more innovative investigations. This process will be neither easy nor inexpensive but the potential rewards to researchers and policy makers justify a bolder approach in the future.

Bibliography

Aber, J. L., Garfinkel, R., Mitchell, C., Allen, L., & Seidman, E. (June 1992). Indices of neighborhood distress: Their association with adolescent mental health and school achievement. Paper prepared for the conference on *The Urban underclass: Perspectives from the Social Sciences,* University of Michigan, Ann Arbor, Michigan.

Aber, J. L., Seidman, E., Allen, L., Mitchell, C., & Garfinkel, R. (1993). Poverty-related risks and the psychological adaptation of urban youth: Testing mediational models. Manuscript under review.

Anderson, E. (1990). *Street wise: Race, class, and change in an urban community.* Chicago: University of Chicago Press.

Barker, R. (1968). *Ecological psychology.* Stanford: Stanford University Press.

Baumgartner, M. P. (1988). *The moral order of the suburb.* New York: Oxford University Press.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design.* Cambridge, MA: Harvard University Press.

Bronfenbrenner, U. (1986). Ecology of family as a context for human development. *Developmental Psychology, 22*(6), 732-742.

Brooks-Gunn, J. Duncan, G. J., Klebanov, P. K., & Sealand, N. (1993). Do neighborhoods influence child and adolescent development? *American Journal of Sociology, 99*(2), 353-395.

Bursik, R. J., Jr. (1988). Social disorganization and theories of crime and delinquency: Problems and prospects. *Criminology, 26,* 519-552.

Burton, L. M. (1990). Teenage childbearing as an alternative life-course strategy in multigenerational black families. *Human Nature, 1,* 123-143.

Burton, L. M., Obeidallah, D. A., & Allison, K. (forthcoming). Ethnographic perspectives on social context and adolescent development among inner-city African-American teens. Chapter to appear in D. Jessor, A. Colby, & R. Shweder (Eds.), *Ethnography and human development: Context and meaning in social inquiry.* Chicago: University of Chicago Press.

Case, A. C., & Katz, L. F. (1991). The company you keep: The effects of family and neighborhood on disadvantaged youths. Working paper No. 3705. National Bureau of Economic Research.

Chaskin, R. J. (1994). Defining neighborhood. A background paper prepared for the Neighborhood Mapping Project of the Annie E. Casey Foundation.

Clark, R. L., Wolf, D. A. (May 1992). Do neighborhoods matter? Dropping out among teenage boys. Paper presented at the annual meeting of the Population Association of America, Denver, Colorado.

Clinard, M. B. (Ed.). (1964). *Anomie and deviant behavior: A discussion and critique.* New York: The Free Press of Glencoe.

Cloward, R. A. & Ohlin, L. E. (1960). *Delinquency and opportunity: A theory of delinquent gangs.* Glencoe, IL: The Free Press.

Cohen, A. K. (1955). *Delinquent boys.* Glencoe, IL: The Free Press.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology, 94,* S95-S120.

Conger, R. D., Elder, G. H., and others. *Families in Troubled Times: Adapting to Change in Rural America.* New York: Aldine de Gruyter.

Cook, T. D., Furstenberg, F. F., Jr., Kim, J. R., Teitler, J. O., Geitz, L. M., Eccles, J., Elder, G. H., Jr., & Sameroff, A. (1994). Neighborhood differences in resources for promoting the positive development of adolescents: The roles of financial, human, social, cultural and psychological capital. Manuscript in preparation.

Coulton, C. J., & Pandey, S. (1992). Geographic concentration of poverty and risk to children in urban neighborhoods. *American Behavioral Scientist, 35*(3), 238-257.

Crane, J. (1991). The epidemic theory of ghettos and neighborhood effects on dropping out and teenage childbearing. *American Journal of Sociology, 96*(5), 1226-1259.

Duncan, G. J., Brooks-Gunn, J., & Klebanov, P. K. (1994). Economic deprivation and early childhood development. *Child Development, 65*(2), 296-318.

Dunn, & Plomin, R. (1990). *Separate lives: Why siblings are so different.* New York: Basic Books.

Elliot, D. S., & Huizinga, D. (August 1990). The mediating effects of social structure in high risk neighborhoods. Paper presented at the annual meetings of the American Sociological Association, Washington, D.C.

Elliott, D. S., Wilson, W. J., Huizinga, D., Sampson, R., Elliott, A., & Rankin. (1994). The effects of neighborhood disadvantage on adolescent development. Paper in progress.

Fine, G. A. (1987). *With the boys.* Chicago: The University of Chicago Press.

Furstenberg, F. F., Jr. (March 1992). Adapting to difficult environments: Neighborhood characteristics and family strategies. Paper presented at the annual meetings of the Society for Research on Adolescents.

Furstenberg, F. F., Jr. (1993). How families manage risk and opportunity in dangerous neighborhoods. In W. J. Wilson (Ed.), *Sociology and the public agenda* (pp. 231-258). Newbury Park, CA: Sage Publications.

Furstenberg, F. F., Jr., Cook, T. D., Eccles, J., Elder, G. H., Jr., & Sameroff, A. Untitled monograph in progress.

Gans, H. J. (1962). *The urban villagers.* New York: Free Press.

Garbarino, J. (1992). *Children and families in the social environment* (Second Edition). New York: Aldine De Gruyter.

Garbarino, J., & Sherman, D. (1980). High-risk neighborhoods and high-risk families: The human ecology of child maltreatment. *Child Development, 51,* 188-198.

Gephart, M. A. (1994). Neighborhoods and communities as contexts for development. Chapter to appear in the Social Science Research Council Monograph.

Hannerz, U. (1969). Soulside: Inquiries into ghetto culture and community. New York: Columbia University Press.

Hogan, D. P., & Kitagawa, E. M. (1985). The impact of social status, family structure, and neighborhood on the fertility of Black adolescents. *American Journal of Sociology, 90,* 825-855.

Jarrett, R. L. (1992). *A comparative examination of socialization patterns among low-income African-Americans, Chicanos, Puerto Ricans, and Whites: A review of the ethnographic literature.* Evanston, IL: Northwestern University, Center for Urban Affairs and Policy Research.

Jencks, C., & Mayer, S. (1990). The social consequences of growing up in a poor neighborhood. In L. E. Lynn & M. G. H. McGeary (Eds.), *Inner-city poverty in the United States* (pp. 111-186). Washington, D.C.: National Academy Press.

Jencks, C., & Peterson, P. E. (Eds.). (1991). *The urban underclass.* Washington, DC: The Brookings Institution.

Jessor, R. (1993). Successful adolescent development among youth in high risk settings. *American Psychologist, 48*(2), 117-126.

Kornblum, W. (1974). *Blue collar community.* Chicago: University of Chicago Press.

Kornhauser, R. (1978). *Social sources of delinquency.* Chicago: University of Chicago Press.

Lemert, E. M. (1951). *Social pathology: A systematic approach to the theory of sociopathic behavior.* New York: McGraw-Hill Book Company, Inc.

Lewin, K. (1951). *Field theory in social science.* New York: Harper & Row.

Lynn, L. E., & McGeary, M. G. H. (1990). *Inner-city poverty in the United States.* Washington, D. C.: National Academy Press.

Manski, C. F. (1993). Identification problems in the social sciences. *Sociological Methodology, 23,* 1-56.

Matza, D. (1964). *Delinquency and drift.* New York: John Wiley & Sons, Inc.

Medrich, E. A., Roizen, J., Rubin, V., & Buckley, S. (1982). *The serious business of growing up.* Berkeley: University of California Press.

Myers, D., & Doyle, A. (1990). Age-specific population-per-household ratios: Linking population age structure with housing characteristics. In D. Myers (Ed.), *Housing demography: Linking demographic structure and housing markets* (pp. 109-130). Madison: University of Wisconsin Press.

Park, R. E., & Burgess, E. W. (1924). *Introduction to the science of sociology.* Chicago: University of Chicago Press.

Rainwater, L. (1970). *Behind ghetto walls.* Chicago: Aldine Publishing Co.

Rosenbaum, J. E. , & Popkin, S. J. (1992). The Gautreaux program: An experiment in racial and economic integration. *The Center Report: Current Policy Issues, 2*(1).

Sampson, R. J. (1992). Family management and child development: Insights from social disorganization theory. In J. McCord (Ed.), *Advances in criminological theory,* Volume 3, (pp. 63-93). New Brunswick: Transaction Books.

Sampson, R. J., & Groves, W. B. (1989). Community structure and crime: Testing social-disorganization theory. *American Journal of Sociology, 94*(4), 774-802.

Sampson, R. J., & Morenoff, J. D. (1994). Ecological perspectives on the neighborhood context of poverty and social organization: Past and present. Unpublished manuscript.

Shaw, C., & McKay, H. (1942). *Juvenile delinquency and urban areas*. Chicago: University of Chicago Press.

Shinn, M. (September 1988). Mixing and matching: Levels of conceptualization, measurement, and statistical analysis in community research. Paper presented at the conference on Researching Community Psychology: Integrating theories and methodologies, De Paul University.

Simcha-Fagan, O., & Schwartz, J. E. (1986). Neighborhood and delinquency: An assessment of contextual effects. *Criminology, 24*, 667-704.

Smith, H. L. (1989). Integrating theory and research on the institutional determinants of fertility. *Demography, 26*(2), 171-184.

Stack, C. B. (1974). *All our kin*. New York: Harper & Row.

Steinberg, L. (1990). Autonomy, conflict, and harmony in the family relationships. In S. S. Feldman & G. R. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 225-276). Cambridge, MA: Harvard University Press.

Sullivan, M. (1989). *Getting paid: Youth crime and work in the inner city*. Ithaca, NY: Cornell University Press.

Sutherland, E. H. (1937). *The professional thief: By a professional thief*. Chicago: The University of Chicago Press.

Sutherland, E. H. (1939). *Principles of criminology*. New York: Lippincott.

Tannenbaum, F. (1938). *Crime and community*. New York: Columbia University Press.

Thorne, B. (1993). *Gender play: Girls and Boys in school*. New Brunswick, NJ: Rutgers University Press.

Thrasher, F. M. (1927). *The gang*. Chicago: University of Chicago Press.

Tienda, M. (1991). Poor people in poor places: Deciphering neighborhood effects on poverty outcomes. In J. Huber (Ed.), *Macro-micro links in sociology* (pp. 244-262). Newbury Park, CA: Sage Publications.

U. S. Bureau of the Census. (1991). *State and Metropolitan Area Date Book*. U. S. Government Printing Office.

Walker, K., & Furstenberg, F. F., Jr. (August 1994). Neighborhood settings and parenting strategies. Paper presented at the annual meetings of the American Sociological Association, Los Angeles, CA.

Williams, T., & Kornblum, W. (1994). *The uptown kids: Struggle and hope in the project*. New York: Putnam.

Wilson, W. J. (1987). *The truly disadvantaged: The inner-city, the underclass, and public policy*. Chicago: University of Chicago Press.

Wilson, W. J. (1991). Public policy research and *The truly disadvantaged*. In C. Jencks & P. E. Peterson (Eds.), *The urban underclass* (pp. 460-481). Washington, D.C.: The Brookings Institution.

Wrong, D. (1961). The oversocialized conception of man in modern society. *American Sociological Review, 26*, 183-193.

Wynn, J., Richman, H., Rubenstein, R. A., & Littell, J. (1988). *Communities and adolescents: An exploration of reciprocal supports*. Washington, D.C.: Youth and America's Future: William T. Grant Foundation, Commission on Work, Family and Citizenship.

Conference on Indicators of Children's Well-Being
Comments by Donald Hernandez

I'll discuss the three papers in the order listed on the agenda. As a preclude, I want to let you know that in Richard Murnanes description of the social indicators cycle, I'm an optimist, and I'd like to encourage the authors of the first two papers, Dennis Hogan and David Eggebeen, and Gary Sandefur to become more optimistic and expansive as they revise their papers. The paper by Frank Furstenberg and Mary Elizabeth Hughes clearly falls in the category of new appetites, but being an optimist, I think that from an indicators perspective many of these appetites really should be satisfied, and new indicators should be developed.

Dennis Hogan and David Eggebeen begin with an observation that is critical for this entire conference, namely, that childhood, as we conceive it, is a recent social invention.

Our conception of childhood emerged during the Industrial Revolution and the associated demographic transition in fertility and mortality. Only during this era did young people become the recipients of the enormous social investment known as formal schooling, and only during this era were young people both allowed and required by law to postpone paid work, and instead to take up the task of preparing themselves for "adult" work responsibilities.

Hogan and Eggebeen quite correctly point out that the recent invention of childhood and adolescence as we know it is the direct result both of new demographic realities and of new social and economic institutional arrangements. This is important to our task of developing indicators of children's well-being for two reasons.

First, as the authors point out, developmental processes may be distinct during childhood life stages, but in some sense our definition of these processes flow from demographic realities and the forces of history. Second, a comprehensive set of indicators of children's well-being must include indicators reflecting the diverse causes of change in child well-being, and this includes indicators highlighting important linkages between demographic, social, and economic changes that influence how children live.

The paper addresses three specific topics namely, race/ethnicity, immigration, and family size.

Hogan and Eggebeen argue that racial and ethnic classification is important because members of different racial and ethnic groups can experience large differences, on average, in their access to economic opportunities, in the socioeconomic resources actually available to them, in their family structure, and in neighborhood resources and experiences. In other words, from an indicators viewpoint, racial and ethnic classification provides an index of child well-being, first because it reflects how children (and their families) are treated by the larger society as a consequence of their group membership, and second because it reflects the special culture and activities to which children are exposed within their group.

The authors recommend that wherever sample sizes are large enough, at least five race and ethnic groups should be distinguished: (1) whites who are non-Hispanic, (2) blacks, (3) Latinos who are non-black, (4) Asian and Pacific Islanders, and (5) American Indians. Unfortunately, given existing sample sizes, this recommendation applies perhaps uniquely to the Decennial Census.

For smaller sample surveys, they recommend a three-fold classification distinguishing: (1) non-black, non-Hispanics, (2) non-black Hispanics, and (3) blacks. This approach takes the white-black distinction as most fundamental, because of its historical importance in the U.S. It then distinguishes Hispanics from blacks and from the white majority, because of the emerging numerical importance of Latinos. Finally, it includes Asians and Pacific Islanders, and American Indians among the whites as a residual category. The corresponding recommendation with regard to measurement is that race and Latino ancestry be collected through separate questions, allowing especially for the identification of black Latinos with Puerto Rican or Central and South American origins.

These are excellent recommendations, but a note of caution is in order. At least in the Census, two-thirds of persons identified as both black and Latino had at least one of these statuses missing during data collection, so that the status resulted from post data collection imputation procedures. This raises a question about how meaningful such data are, at least in the Census. I also note that the Census Bureau is currently testing a variety of alternatives to measuring racial and ethnic identity, including one with a multi-racial category and one which asks a single, combined, or uni-dimensional question, that is, one asking respondents to select white, black, Hispanic, or some other origin as mutually exclusive categories. This research may shed important empirical light on the best way to measure race and ethnicity in the U.S. today.

In a spirit of optimism, I'd also like to offer one additional recommendation and one observation in the area of race/ethnicity. First, we should not be satisfied with the failure of virtually every existing survey to provide a sample size large enough to provide estimates for Asians and for Latino sub-populations. As shown in Figure 1, one-in-seven U.S. children in 1990 were either Hispanic or Asian. As shown by population projections in Figure 2, only 35 years from today, in 2030 white non-Hispanic children, the current majority, will fall to 50 percent of the total -- the remaining one-half of all children will be Black (18 percent), Hispanic (24 percent), Asian (8 percent), or some other minority. Again, 8% of children in 2030 will be Asian.

Given these trends, we will fail in providing analyses and indicators that will be critical to our understanding of the well-being of children in the future, if we do not begin today to select special sub-samples in major surveys for the Latino and Asian populations.

My observation concerns the substantial likelihood that the Census Bureau will field a new Continuous Measurement Survey beginning within the next few years. With a monthly sample size of 250,000, the census long-form content, and the rolling geography of the sample, it will provide two important opportunities, if it comes into being. First, it will provide much more up-to-date measures of indicators involving race/ethnicity and variables traditionally collected on the long-form or sample-form. Second, it will provide a relatively cost-effective basis for drawing samples for surveys that include major over-samples for the Latino sub-populations and the Asian population.

Immigration is the second topic area addressed by Hogan and Eggebeen. Their rationale for the importance of immigration indicators shares much with the one they offer regarding race and ethnicity.

Immigration status, like racial and ethnic classification, is index of child well-being, first because it reflects how children (and their families) are treated by the larger society as a consequence of their group membership, and second because it reflects the special culture and activities to which children are exposed within their group. From the perspective of public policy and child well-being, the recent passage of Proposition 187 in California underlines the importance of migrant status among children, since this proposition will, if upheld by the courts, exclude children from school if they are illegal immigrants, and sharply curtail their access to health care. New proposals reported in yesterday's Washington Post for welfare reform also would simply exclude all alien immigrants from access to many welfare program. This underlines the importance of immigrant status as an indicator.

Their basic recommendation is that national studies of child well-being should ideally distinguish: (1) the foreign-born, (2) the native-born of foreign-born parent(s), and (3) the native-born of native-born parents. They also suggest that some situations simply distinguishing the foreign-born is adequate. I fully agree with these general recommendations.

Again in a spirit of optimism, however, I would add that the both data collection and reporting categories should be refined according to citizenship status, place of birth, and at least occasionally by year of entry into the U.S. Fifteen percent of the foreign born in 1990 were born abroad as U.S. citizens, or born in U.S. territories. The distinction between for foreign-born foreigners, and foreign-born Americans is important if we are to identify children who grow up in economic, family, and cultural settings different from those of children whose families have been American for three generations or more.

To add force to the arguments for the values of immigration data, I'll cite a couple of results from my census monograph, America's Children (Hernandez, 1993), I developed estimates from the 1980 census of demographic and socioeconomic circumstances for (1) first-generation Hispanic children, that is, those who represent the first generation within their families to be born U.S. citizens, and (2) old-family Hispanic children, about two-thirds of whom were third-, fourth-, or later-generation Americans.

One striking result was that poverty rates for first-generation and old-family Hispanic children were nearly identical, at 29 and 31 percent for the official poverty rate, and 45 and 40 percent for a relative poverty rate. In fact first-generation Hispanic children in two-parent families had an official poverty rate similar to corresponding old-family Hispanics (25 versus 19 percent), and first-generation Hispanic children in mother-child families had lower official poverty rates than corresponding old-family Hispanics (51 versus 62 percent).

Hogan and Eggebeen point out that not since 1970 has nativity been measured in a comprehensive fashion in the Census. The good news is that the Current Population Survey has begun to collect most of these data on a monthly basis. In addition, the Census Bureau has preliminary plans to collect data on nativity in the 1996 Survey of Income and Program Participation (SIPP). Although it is not practical to directly identify illegal immigrants in such a survey, the residual immigrant status category in SIPP will provide a rather good estimate of illegal immigrants.

Beyond these recent and prospective improvements in data collection, I would recommend that the Continuous Measurement Survey, and other major surveys also obtain such data. In view of the importance of immigration to future U.S. population growth, indicators of child well-being during coming decades will suffer substantial limitations if such data are not available for their construction.

Family size is the third area for which Hogan and Eggebeen offer recommendations. As the primary indicator, they urge a simple count of the number of dependent (under age 18) children living in the household, arguing both that the data are readily available in most data sets, and that the measure reflects current group dynamics in families of different size as well as the dilution of current resources in the family. I concur completely with this recommendation.

The authors reject the use of an alternative, namely, the number of children ever born to the mother, since some children do not co-reside with all of their siblings for all of their childhood, since some siblings die, since the children-ever-born question is not asked of fathers, and since step-siblings are not included in the mother's fertility history (although half-siblings often are included).

As the authors point out, however, the current number of siblings in the home measure "...does not do very well at indicating the life course experience of a child." In addition, in the major studies of resource dilution by Judith Blake (1985, 1987, 1989), the measures of number of siblings for adolescents are fairly close to the children ever born measure, in part because they include siblings over 18 who are in the home--a rapidly growing group--and in part because they include siblings who recently left home. In view of the importance of measures reflecting the cumulative life course experience of children, and in a spirit of optimism I would suggest that both measures be used, especially for adolescents, even though this would require asking a children ever born question of women on many surveys that do not currently obtain this information.

Hogan and Eggebeen also recommend a second indicator of family size, the adult-child or parent-child ratio within the home, because this provides a measure of resource dilution that takes into account both the number of potential resource givers and the number of potential competitors for resources. The authors explore various advantages and disadvantages of this measure, but one additional disadvantage resides in possible incomparability of identical numerical values.

For example, does a ratio of 1.0 for a family with one adult and one child really mean the same thing as a ratio of 1.0 for a family with two adults and two children? I suspect not.

In addition, it is not clear that the group dynamics of interest are a simple linear function of the number of children in the home, and it is clear from the work of Judith Blake cited in the paper that historic changes in how sibsize influences child outcomes are not a linear function of number of siblings, but are in fact a curvilinear function of sibsize. As a measure of resource dilution, then, this measure is potentially misleading.

This is not to deny that indicators of this type are potentially valuable and informative. For example, several years ago, I (Hernandez and Myers, 1987) developing a variety of child-to-adult ratios for black and white children for 1940 through 1980. One of the striking conclusion was the following. Despite the large increase between 1940 and 1980 in the size of the gap between white children and black children in the proportion living in mother-only families, the racial gap in the proportion with small child-to-adult ratios or large child-to-adult ratios changed very little over the entire forty year period.

Nonetheless, in view of ambiguities in this measure rather than wholeheartedly recommending the use of this measure as a key indicator, I would suggest that the suitability and meaning of the measure be studied further.

Gary Sandefur focuses on family structure, family instability, and child well being. He suggests that family structure and stability are not direct indicators of child well-being, but that they are instead associated with many of these indicators. This is an extremely important point which can be lost in the detailed refinements of analytical studies, and which often is lost in the simple reporting of indicators.

Sandefur especially distinguishes two-parent families, one-parent families, and step-families, and their implications for economic, parental, and community resources. Regarding economic resources, he points out that divorce and out-of-wedlock childbearing can often lead to a reduction in income for the custodial parent compared to married parents. He also discusses family disruption, where the absence of a parent can lead to reduced access to parental resources, and how subsequent cohabitation or maternal marriage or remarriage can have disruptive effects for children.

He further suggests, however, that not all of the difference in the economic circumstances of children in different family situations are due to divorce or out-of-wedlock childbearing. This is important if family structure and stability indicators are to be interpreted in a meaningful way.

In fact, with regard to divorce, Glen Elder and his colleagues (Liker and Elder, 1983; Elder, Foster, and Conger, 1990; Conger, Elder, Lorenz, Conger, Simons, Whitbeck, Huck, and Melby, 1990) have found that instability in husbands' work, declines in family income, and a low ratio of family income-to-needs lead to increased hostility between husbands and wives, decreased marital quality, and increased risk of divorce.

Also, in a recent study using the SIPP, I (Hernandez, 1992) found that among two-parent households, poor ones are twice as likely to discontinue over a two-year period as a non-poor ones, and two-parent families with the father not working are twice as likely to discontinue as those where the father is working. As a result, using a monthly poverty rate, I found that among children in newly-formed mother-child families that are poor, the proportion of children who were already poor in their two-parent family one year earlier was 27 percent for whites and 37 percent for blacks.

Similarly, with regard to out-of-wedlock childbearing, 36 percent of never-married mothers have less than a high school education, and 40 percent have only graduated from high school, while a tiny 8 percent have completed any college degree including two-year associate degrees (Bachu, 1992).

Citing social and emotional adjustment as a direct measure of child well-being and later adult well-being, Sandefur points out that most research has focused on the aftermath of divorce, finding that harmful effects clearly occur although they are far from universal.

Regarding educational attainments and labor force participation, he cites evidence that family structure and family instability influence a variety of measures of educational achievement for young adults, and labor force participation among young men, and that measures of income, income loss, other parental resources, and community resources account for a good deal of the difference for children in two-parent versus one-parent families.

Finally, he cites evidence suggesting that living with a single parent reduces a woman's access to parental and community resources, as well as reducing the expectation that she will be able to continue her education beyond high school. This can lead to incentives to delay childbearing that are weaker than those for other young women.

In short, family structure and instability have important effects on direct indicators of child well-being and long-term child outcomes, and these effects often act through income, and parental and community resources. Hence, family structure and instability, and, I would add, the causes of family structure and instability, represent important indicators, at a remove, that is, we might say leading indicators, of child well-being that should be part of any comprehensive set of child indicators. In addition, measures of income, and parental and community resources also are essential to a complete set of child indicators.

Resting upon these arguments and a review of existing measures of family structure and stability, Sandefur offers five major recommendations.

First, he recommends that the Census and Current Population Survey should distinguish children living with a biological parent and a step parent, and children living with two cohabiting biological parents, and they should ascertain the geographical proximity of the noncustodial parent and the frequency of contact with the noncustodial parent. These are excellent recommendations, and we have already made attempts, which were unfortunately not fully successful, to identify step parents in the Census and CPS.

The greatest movement in the recommended direction is occurring in the Census Bureau's other major economic and population survey, the SIPP. Beginning in 1996, the SIPP will identify the biological, step, and adoptive parents in the homes of children, regardless of the parents marital status, that is, including those living with two cohabiting biological parents.

In the Continuous Measurement Survey, which is seen as replacing the Census long-form data, we hope to conduct tests aimed at collecting these data. Regarding the CPS, we plan to identify unmarried partners, but this is as far as our plans for CPS go at present.

Regarding the proximity and frequency of contact with non-custodial parents, I'd like to bring to your attention the new Survey of Program Dynamics (SPD) with which the Census Bureau is planning to collect annual data for 1996-2002. Since plans call for using the 1993 SIPP panel as the sample for this survey, when combined with SIPP, it provides a 10-year panel study. With funding from the Assistant Secretary for Planning and Evaluation of the Department of Health and Human Services, and from the Food and Consumer Service (formerly the Food and Nutrition Service) we are now planning that the SPD will include a major data collection effort focussed on a wide variety of measures of child well-being, including the types of data which Sandefur recommends.

His second recommendation is that family residential histories be collected with a monthly accounting period, to capture short-term changes in residence. This is an intriguing idea, and I'd like to learn more about how this might be accomplished in an efficient manner. Again, I would note here that in SIPP we collect residential information for changes that span the four month interval between interviews.

Sandefur's third recommendation is that better data be collected on foster care. The suggestion that monthly residential histories for surveys and improved administrative data could lead to improved data on this form of extreme family instability seems quite reasonable. In view of the small proportion of children in foster care, the large sample size and monthly fielding of the Continuous Measurement Survey may be another promising vehicle for obtaining such data.

Sandefur's fourth recommendation is for improved understanding of child abuse and neglect through questions on national surveys and improving the quality of administrative data. This also is a worthy goal. In the context of national surveys, perhaps the best vehicle would be surveys devoted mainly to child well-being.

The fifth recommendation is that (1) the Bureau of the Census should continue to issue its two major yearly reports on family structure, namely, the CPS reports on Marital Status and Living Arrangements and on Household and Family Composition, (2) that reports such as Kids Count should be issued each year with state level data on family structure, and (3) there is a need to report more systematically on child abuse and neglect and placements in foster care.

Regarding the CPS reports, since I am responsible for their preparation, I was happy to see this recommendation. I also support the recommendation regarding the other reports, and would note that, if it moves forward, the Continuous Measurement Survey will provide a wealth of state and local area data on family structure and many other topics for both governmental and nongovernmental reports.

In addition, in a spirit of optimism, I would urge that the regular production and publication of indicators of the life course experience of children with family instability that is, measures of timing, duration, and cumulative experience with various family statuses. For example, the proportion spending their entire childhood with both biological parents, the person-years spent in families with two biological parents, a never-married mother, a divorced parent, a step parent, etc. Also the distribution of children by the number and type of transitions experienced. Such indicators could be or have been developed both from longitudinal surveys and from marital and fertility history data.

Frank Furstenberg and Mary Elizabeth Hughes do not focus on specific recommendations for social indicators for children. Instead they do what their subtitle suggests. They present a theoretical perspective which lays out an extremely rich set of issues that need to be addressed if we are to truly understand the causes of changes in child well-being through time and across space, and they present a research agenda in the form of the ultimate research design that would be required to simultaneously address all the relevant theoretical and empirical issues.

The paper begins by highlighting how William Julius Wilson's 1987 book, The Truly Disadvantaged, has been central in focusing attention and research on the role of neighborhoods, and the interaction between various levels of social and economic organization as these influence the well-being of children. As Furstenberg and Hughes put it, "Wilson's thesis about the devastating impact of economic stagnation and urban disintegration put poverty research back on the social science agenda".

The two preceding papers called our attention to the consequences for child well-being that are associated with family structure, family instability, family size, and minority group membership. This paper calls our attention to the causes of family change and to forces that influence why minority group membership is so important to child well-being.

Furstenberg and Hughes focus especially on the neighborhood as the locus of a very large number of factors that influence children's well-being. They discuss several theoretical orientations suggesting important causal links between various features of communities and children's well-being. They emphasize that a cross-disciplinary approach is essential because questions regarding the influence of neighborhoods on children are at the intersection of several disciplines. They review existing research, and point out the limitations of existing data sets for testing neighborhood effects. Hence, there is a strong need for new research designs and new data. They also discuss various approaches to measuring neighborhood, family, and individual characteristics in order to test different explanations of how communities influence children's developmental trajectories.

Furstenberg and Hughes present three theoretical perspectives which they see as overlapping and complementary. They portray Wilson's argument about the causes and consequences of concentrated poverty in the following way: "Wilson ...argued that persistent poverty is created and sustained by a unique amalgamation of economic, social, and cultural elements that are fused together creating specialized local environments. Macro-economic conditions have reduced the demand for unskilled labor and limited the chances of those less equipped by education and background to compete for scarce jobs. Institutional resources within poverty neighborhoods have declined with exit of middle-class residents seeking more desirable locations and the limited commitment of government to sustain inner-city institutions. Declining rates of marital stability due to the lack of marriageable males has decreased the availability of role models within the family".

As one complementary approach, they cite social disorganization theory, suggesting that: "The level of social organization in the community, that is the degree to which residents are able to realize common goals and exercise social control, is a reflection of systems of social relationships within the community and of the content and consensus values". As a second complementary approach they cite Coleman's concept of social capital, which refers to social relationships that serve as resources for individuals to draw upon in implementing their goals.

They go on to point out, however, that these explanations place little emphasis on the developing children or even on the family dynamics that may contribute to children's acquisition of values, skills, and practices.

To overcome this limitation, they urge the need to also incorporate a more psychological or social psychological perspective which focuses on the ways that parents and children organize, adapt to, and shape their immediate environments. They argue that parents, to the extent possible, locate and select desirable environments for their children, channelling children's access to favorable settings or at least segregating them from undesirable locales. The parents' abilities to do so depend on their material, social, and personal resources and on their skill in gaining compliance from their children."

This theoretical perspective argues very strongly that any set of indicators of children's well-being will be seriously incomplete, and represent a biased understanding, if it does not include measures at all levels of analysis from individual children and parents, through family process, up to the community and neighborhood level. At the same time, their critical review of existing data sets and research suggest that we have a long way to go in developing many needed indicators.

To develop the needed knowledge, Furstenberg and Hughes argue that research designs (1) should be multilevel, that is, collecting data at all levels of analysis, (2) should measure neighborhood boundaries in a way that reflects the reality as experienced by individuals, (3) should involve sampling neighborhoods as well as dense samples of families and individuals within neighborhoods, (4) should involve longitudinal data to disentangle complicated questions of causal direction and process, and (5) should involve combining quantitative and qualitative approaches.

In the limits of their paper, and I in the brief time available, one can only touch on some of the measurement needs. They argue for measures of the opportunities and constraints existing in geographic communities in which neighborhoods are themselves embedded, including labor markets, marriage markets, and housing markets, level of welfare benefits, etc. They argue for measuring neighborhood processes, and trajectories. They argue for measures of neighborhood infrastructure, such as types and quality of housing, the use and arrangement of space, and the level of deterioration over time. They argue for measures of neighborhood demographic composition. They argue for measures of neighborhood institutions, such as police protection, social welfare agencies, public health clinics, and libraries, including parents' and children's perceptions and actual use of these institutional resources. They argue for measures of neighborhood social organization, involving shared norms, reciprocal obligations, and information channels. They argue for measures of properties of family systems, including residential mobility and related variables, how parents relate to their local environments, and reciprocal obligations within the family. Finally, they argue, of course, for measures of children's development.

This paper is a tour-de-force, and I cannot fully portray the breadth and richness of the arguments. I do, however, recommend the paper highly for a comprehensive overview of the full range of domains that child indicators should encompass and for a rich interpretation of how and why these domains are related.

This brings us full circle. The first paper pointed out that childhood as we know it is a recent social invention. The second paper shows us how the family is a critical influence in child well-being. The third paper shows us how our indicators for child well-being must focus on the child, but that they will be seriously incomplete and, as Kristin Moore suggested early in this conference, potentially biased, if they do not move beyond the child, not only to family structure and family process, but to the neighborhood and community level, and to the broader social, economic, and demographic milieu that both created childhood as we know it, and that continues to profoundly influence the well-being and development of children.

References

Bachu, Amber. 1993. Fertility of American Women: June 1992. U.S. Bureau of the Census, Current Population Reports, P20-470, U.S. Government Printing Office, Washington, D.C.

Blake, Judith. 1981. "Family Size and the Quality of Children." Demography 18: 321-342.

___________. 1985. "Number of Siblings and Educational Mobility." American Sociological Review 50: 84-94.

___________. 1987. "Differential Parental Investment: Its Effects on Child Quality and Status Attainment." In Jane B. Lancaster, et al., Parenting Across the Life Span: Biosocial Dimensions. New York: Aldine de Gruyter, pp. 351-375.

___________. 1989. Family Size and Achievement. Berkeley: University of California Press.

Conger, Rand D., Glen H. Elder, Jr., Frederick, O. Lorenz, Katherine J. Conger, Ronald L. Simons, Les B. Whitbeck, Shirley Huck, and Janet N. Melby. 1990. "Linking Economic Hardship to Marital quality and Instability." Journal of Marriage and the Family 52: 643-656.

Elder, Glen H., Jr., E. Michael Foster, and Rand D. Conger. 1990. "Families Under Economic Pressure." Presented at the annual meeting of the American Sociological Association.

Hernandez, Donald J. 1993. When Households Continue, Discontinue, and Form. U.S. Bureau of the Census, Current Population Reports, Series P23-179, U.S. Government Printing Office, Washington, D.C.

___________. 1993. America's Children: Resources from Family, Government and the Economy. New York: Russell Sage Foundation.

Hernandez, Donald J., and David E. Myers. 1987. "Children and Their Extended Families Since the Great Depression." Presented at the annual meeting of the Population Association of America.

Liker, Jefferey K, and Glen H. Elder, Jr. 1983. "Economic Hardship and Marital Relations in the 1920s." American Sociological Review 48: 343-359.

Wilson, William Julius. 1987. The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy. Chicago: University of Chicago Press.

SOCIAL DEVELOPMENT AND PROBLEM BEHAVIORS

Indicators of Positive Development in Early Childhood: Improving Concepts and Measures

J. Lawrence Aber
Stephanie Jones
National Center for Children in Poverty
Columbia University, School of Public Health
154 Haven Avenue
New York, NY 10032

Prepared for the Conference on Indicators of Children's Well-Being, Bethesda, MD, November 17-18, 1994.

I. Introduction

According to Takanishi and her colleagues (1994), research on adolescent development has yielded more concepts and measures describing maladaptation and problematic development than those describing adaptation and positive development. While not as extreme, much the same can be said of research on early childhood development. But for reasons put forward by Moore (1994) and Brooks-Gunn, Brown, Duncan & Moore (1994), designers of systems of childhood indicators should balance their emphasis between measures of positive development and measures of problematic development.

There are good conceptual and policy reasons to create an indicator system that includes measures of both positive and negative development and status. The main conceptual reason is that not all things that sound unidimensional are unidimensional. Take for example, children's expression of emotion. Measures of positive affect and measures of negative affect are empirically independent if rated separately (rather than being forced onto a single continuum from positive to negative). Children rated as high in both positive and negative affect have very different developmental histories and future life chances than children rated as high on negative affect only (Belsky, Hsieh & Crnic, under review). Similarly, authoritative and authoritarian parenting styles can be forced onto a single dimension or rated independently. When rated independently, the combination of high authoritative and high authoritarian parenting has a very different effect on the cognitive development of low-income preschoolers than the combination of high authoritative and low authoritarian parenting (Morris, Aber & Brooks-Gunn, in preparation). In short, the positive is not always the opposite of the negative. Thus, concepts and measures of positive development should be and can be developed in their own right.

The main policy reason for separately conceptualizing and measuring features of positive development is that program or policy efforts targeted at reducing negative outcomes are not the same as efforts targeted at increasing positive outcomes. Early childhood programs may reduce the number of I.Q.'s below 70 and/or raise the number above 115. They may reduce the expression of behavior problems and/or enhance children's mental health. They may reduce school failure and/or increase school success. To the extent that indicators of positive development are conceptually and empirically distinct from indicators of negative development, they offer a whole new perspective on the full range of program and policy issues for which we are developing indicator systems.

In this paper, we have been asked to focus on indicators of positive development in early childhood. Further, they are to be "indicators that pertain directly to child outcomes and children's well-being" rather than "indicators of institutional or jurisdictional performance". Since the only other time period mentioned in the program is adolescence, we have construed early childhood to cover the periods from infancy to late childhood, roughly ages 0 to 10 years, and to explicitly end before pre-adolescence/early adolescence. As requested, we will address (1) the state of indicators, (2) the prospects for improved indicators by the end of the decade, and (3) the steps, data sources and methods required to obtain better indicators. Because the number of feasible, well-validated indicators of positive development in early childhood that meet Moore's (1994) criteria for indicators are few, and because the few that exist are described and analyzed in Brooks-Gunn et al. (1994) and Love (1994), we will only briefly discuss the current status of indicators. Rather we will focus on the concepts and methods which we believe are necessary to improve prospects for better indicators of positive development in early childhood. As has been emphasized by several other authors (e.g., Brooks-Gunn, et al., 1994, Takanishi, Mortimer & McGourthy, 1994), in light of scarce resources, tough tradeoff decisions will have to be made about how to invest our "indicator" dollars.

In individual evaluations and surveys, the tradeoff which designers make nearly always involves a conservative bias in favor of already established measures of proven feasibility, reliability and validity. We interpret the holding of this conference to indicate that we are becoming aware of some of the costs of this conservatism in reducing the ultimate power and value of future indicators of child well-being. Thus, it is to the future that we will be looking in these comments.

II. Current Status of Indicators of Positive Development in Early Childhood

We are interested in creating social indicators for a variety of purposes. These include: (1) raising public awareness of, concern with or attention to issues of children's well-being (consciousness-raising); (2) monitoring and tracking the well-being of children in specifically defined political jurisdictions to promote action at the levels of cities and towns, states, regions, the nation (social forecasting); (3) for use in academic and policy research to test explanatory models of the influence of economic, social and program/policy factors on children's development (causal modeling). It is ideal when indicators can well serve consciousness-raising, social forecasting and causal modeling purposes all at once, but there is certainly no guarantee that they will. Indeed, some measures most effective for consciousness-raising purposes may be highly ineffective for use in causal modeling, and visa versa.

The best examples to date of indicators bred for consciousness raising (and to some extent, social forecasting) purposes are measures developed for KIDS COUNT (1994) or similar efforts. Unfortunately, they focus nearly exclusively on indicators of negative status or problematic development. The death rate for children ages 1 to 14, the juvenile violent crime arrest rate and the percentage of children in poverty are examples of the indicators used by KIDS COUNT to assess children's well-being. Childhood indicators bred for academic and policy research (and to some extent social forecasting) are much more likely to include measures of positive development. Examples of data sets with some indicators of positive development (that meet Moore's criteria of "indicators") include: (1) the National Longitudinal Survey of Youth-Child-Mother Data (NLSY-M/C); (2) the National Survey of Children (NSC); (3) the National Health Interview Survey - Child Health Supplement (1988 (NHIS-CHS); and (4) the National Survey of Families and Households (NSFH). Brooks-Gunn et al. (1994) describe and compare/contrast these and several other data sets and present numerous recommendations to improve the quality of indicators for use in policy research. The NLSY-M/C, NSC and NSFH collected a broad array of age-appropriate child outcome measures in the domains of physical, cognitive and social-emotional development. These domains were assessed using different information sources for different surveys (NLSY: mother interviews and in-home child assessment; NSC: interviews with parents, teachers and children; NSFH: interviews with parents only).

As we will argue below, indicators should (nearly) always include children, not just their parents, as an important data source. Many of the ideas we outline below about how to develop improved indicators of children's well-being involve how to elicit and record responses from the children themselves. It is critical to give children a more direct voice in assessing their well-being. In addition, we will also argue that we should move beyond age-appropriate measures to the identification and creation of stage-salient measures to include in our tool kits of key indicators.

Data sets and measures developed for consciousness-raising (like the KIDS COUNT data sets) are able to be collected longitudinally, can achieve considerable geographic specificity but focus on negative outcomes to the exclusion of positive outcomes. Data sets and measures developed for testing causal models are too often cross-sectional or restricted to a very few longitudinal waves, can't be reported at the level of political jurisdictions, but more often include measures of positive development. What's needed is to combine the longitudinal feasibility and geographic specificity of consciousness-raising measures with the emphasis on positive development and age-sensitivity of causal modeling measures. Most importantly, we need to go beyond the few standard measures of cognitive development (e.g., the PPVT) and behavior problems (e.g., the Behavior Problem Index) to measures/indicators that operationalize the concept of positive development in a richer, more powerful and useful way. But in order to measure positive development, especially in early childhood, we first have to decide what it is.

III. Prospects for Improved Indicators of Positive Development in Early Childhood

As Moore (1994) points out, current approaches to the use of childhood indicators rarely assess positive behaviors and development. We believe that there are two major reasons for the paucity of indicators of positive development in early childhood. First, like Moore (1994), we believe there is little agreement over or discussion of the behaviors and characteristics that define positive development. "Americans may agree that the absence of serious problems...is a component of positive development; but presumably there is "something more" than the simple absence of problems." (Moore, 1994 p. 21). Future prospects for better indicators of positive development depend heavily on our ability to conceptualize positive development. The conceptualization of positive development in the early childhood years is the main focus of this section of this paper.

A second reason for the paucity of indicators of positive development is the continuing gap between developmental theories and methods on the one hand and sociological/economic theories and methods, especially survey methods, on the other hand; this despite the efforts of many at this conference. This issue of theoretical rapprochements and methodological innovations will be the focus of section IV of the paper.

While there has been little discussion of the concept of positive development in society more generally or in the social indicators field more specifically, discussions have begun in the fields of both child and youth policy (Trickett and Zigler, 1978; Pittman & Cahill, 1992; Carnegie Council on Adolescent Development, 1990) and child and adolescent development (Sroufe, 1983; Connell, Aber & Walker 1995, etc.). Several theorists argue that childhood development is characterized by rapid growth and change in basic physical, cognitive, behavioral and social-emotional capacities. Growth in these capacities requires and permits the reorganization and re-integration of these developing systems of capacities. One way to theoretically capture the orderly nature of these reorganizations of developing systems is with the concept of "stage-salient developmental tasks". Stage-salient developmental tasks are those newly emergent tasks which children must face (in particular social/cultural contexts) using their most recently developed capacities and which are critical to children's immediate and long-term adaptation. They represent the cutting edge of development where individual differences in the quality of adaptation and development are easily discerned. If individual differences in mastering stage-salient tasks are easily discerned, this has implications for the creation of indicators of positive development.

Perhaps the most widely influential early theory of stage-salient tasks was described by Erik Erikson when he presented his theory of eight major stages of psychosocial development over the life span in Childhood and Society (Erikson, 1950). Over the last twenty years, a number of developmentalists have built upon this idea and created a theory of stage-salient developmental tasks of early childhood that they began to operationalize through various measurement and assessment procedures (Sroufe, 1983). These theoretical and methodological developments have led to success in describing and explaining continuity in adaptation/maladaptation in early development.

On the basis of these developments and successes, one potentially useful way to conceive of positive development is as children's success in negotiating this series of stage-salient developmental tasks. In Table 1, we present a set of stage-salient tasks of early childhood slightly modified from a similar set described by Sroufe (1983). After briefly describing the tasks and current ways of operationalizing them, we will discuss some of the benefits and costs of conceptualizing "positive development" in this way for the field of childhood indicators.

(a) Stage-salient developmental tasks of early childhood. This paper is not the appropriate forum for a full explanation of the concept of stage-salient developmental tasks (see Sroufe, 1979 for a full explanation). But since we are arguing that future prospects for improved measures of positive development in early childhood depends so heavily on this conceptualization, we must describe the general idea and some key tasks in more detail so that the logic of the argument is available to you for review.

The basic idea behind Table 1 is that there is a hierarchy or set of priorities to the tasks of early childhood. Because humans are born in such a helpless state and depend on their relationships with their primary caregivers for biological protection and sustenance, emotional support and cognitive stimulation, the most important task of infancy is develop a strong and trusting relationship with a finite set of primary caregivers. Only after infants develop a secure attachment to their primary caregivers are they optimally prepared to use those primary relationships as a secure base to go out and actively explore and learn about the world. According to this framework, developing an active curiosity and skill at exploration of the interpersonal and object worlds and balancing exploration with maintaining a sense of security are the key tasks of toddlerhood.

As children's cognitive and metacognitive skills mature, they begin to exercise (and adults begin to expect them to exercise) more self regulation of thought, behavior and emotion. Developing self-control and the flexibility to adjust the level of self-control to the demands and opportunities of different and changing contexts is the key stage-salient task of the preschool years.

A certain capacity for self-regulation is necessary before children can begin to develop more advanced skills in negotiating interpersonal conflicts and in solving social problems especially with peers (who are less skilled) rather than adults (who on average are more skilled) in non-aggressive ways. The development of interpersonal negotiation strategies and social problem solving skills, especially in highly conflictual situations with peers, represents the cutting edge of social-emotional development in the early school-age years.

Finally, in middle to late childhood, building on the significant cognitive and social-emotional advances of early childhood, children begin to consolidate a sense of self. Individual differences in perception of self as competent and efficacious become more pronounced and predict behavior in both the social and academic spheres of life with increasing power.

At present, each of these constructs can be measured quite effectively using labor-intensive "high-fidelity" methods in both laboratory and field conditions. Table 2 briefly reviews methods currently used by developmentalists to assess these constructs from infancy to early childhood. But, with one or two important exceptions, these constructs are not yet able to be assessed using large scale survey assessment techniques. This is the second major limit to improving indicators of positive development. (We will address this limit in Section IV of the paper).

Several other points are important to make regarding this way of conceptualizing positive development.

1. Stage-salient tasks don't mean stage-specific tasks. These tasks are not important at only one stage of development. On the contrary, most of them are life-course developmental issues. Each has precursers in earlier stages of development before they become especially salient. For example, before the preschool years in which self-regulation becomes salient, developmental precursers to self-regulation emerge in infancy (homeostatic regulation) and toddlerhood (elementary self control) (see Kopp, 1982 for a full description of the development of self-regulation). Each also remains an important feature of psychosocial functioning for the rest of the life-course after it emerged at an earlier stage as especially important. Issues of trust/security and non-aggressive negotiation of conflict affect the quality of adaptation throughout life and may rise and fall in importance at various other points in the life course. What is meant by stage-salience is that this task becomes of overriding importance to the quality of adaptation for the first time at about this stage of development. That is what we meant before by referring to stage-salient tasks as the cutting edge of development. And that is why, for an indicator system which wants to include measures of positive development, the concept offers some power. At that stage, an assessment of children in that domain is likely to be the clearest window into the quality of their adaptation. In addition, measures of the quality of adaptation to earlier stage-salient tasks are the best predictors of quality of adaptation to later stage-salient tasks (Sroufe, 1979).

2. This conceptualization of positive development emphasizes social-emotional development. There are both practical and theoretical reasons why we've chosen to do so. Practically, there are better measures that are usable in large-scale surveys for cognitive and physical development than for social-emotional development. Consequently, measures of cognitive and physical development have been employed more broadly in social indicator systems to date. Therefore, as a practical matter, we decided to focus on measures of positive social-emotional development in the hopes of making a stronger case for their inclusion and thus stimulate the work it will take to make good measures of social-emotional development available for large-scale indicator systems. We are not arguing that a full conceptualization of positive development shouldn't include measures of cognitive and physical

development. They should. (See Love, Aber & Brooks-Gunn, 1994 for a similar argument about the difficulty of measuring social-emotional features of school readiness compared to cognitive development or physical health features).

Theoretically we believe there is mounting evidence that supports a long-standing philosophy of early education that emphasizes the primacy of the social-emotional bases of later learning. For example, in a growing number of studies, measures of social-emotional development at earlier stages predict cognitive development and academic achievement better at later stages than do earlier measures of cognitive development (Alexander, Entwisle & Dauber, 1993; Entwisle & Alexander, 1993).

3. In this conceptualization of positive development, we have emphasized the abilities of the child, not contexts of inputs to or outcomes of development. A comprehensive framework for understanding positive development will include concepts and measures of each of these features as well. (See J. Brooks-Gunn, et al., 1994, for a discussion of this larger framework). The points we wish to make here are that: (1) the ability to negotiate stage-salient tasks that we have described as at the heart of positive development is the dynamic feature of development that links inputs into development (like the quality of parenting, the quality of child care, the influence of peers) with policy-relevant outcomes (like school-readiness, academic achievement, the development of severe behavioral and mental health problems, etc.); and (2) therefore, contexts, inputs and outcomes need to be conceptualized in stage-salient terms as well. Specifically, there is a clear shift in the salience of certain developmental contexts as children move from one developmental stage to another. For example, primary caregivers are especially important earlier in development. They always remain important but secondary caregivers (e.g., teachers and peers) become increasingly important later in development. Similarly, at the most general level, the quality of parenting is a crucially important input into development throughout childhood, but different features of parenting shift in salience over time. In infancy, the sensitivity of the parent in reading the baby's cues and the parent's contingent responsiveness to those cues are critical inputs into the stage-salient task of developing a secure relationship with the primary caretaker. Later the parents ability to help their toddler and preschooler cope with frustration during a difficult problem-solving task and derive a sense of mastering in coping with frustrating tasks are stage-salient parental inputs into the development of self-regulation. The implications of the concept of stage-salient tasks for conceptualizing and measuring contexts, inputs and outcomes in an indicator system are important to work through. To my mind, what we have to decide is whether the potential coherence and power that adapting this developmental perspective on indicators provides (a) can be achieved practically through the development of good measures capable of being used in large, field-based surveys, and (b) is worth the added complexity that this perspective undoubtedly brings to the task of designing indicator systems. We will turn to these issues in the last section of this paper.

(b) Costs and benefits of conceptualizing "positive development in early childhood" as success in negotiating stage-salient tasks. As we have suggested above, the major costs for an indicator system of conceptualizing "positive development" in the manner described above are: (1) the added complexity it brings to measurement and sampling; and (2) the delay in including measures of positive development immediately since there are few measures that are field ready that can be pulled off the shelf. (This of course assumes that if we make the effort to develop survey-use measures of success in negotiating those stage-salient tasks, we will succeed. For reasons described below in Section IV, we believe we will). We believe the long-term benefits outweigh these short-term costs.

We won't pretend that the stage-salient tasks outlined above are universal. Indeed, they are likely to be somewhat culture and context specific, at least in their details. But we assert that in the modern U.S. they do have broad if not universal appeal and relevance. (Certainly, they have evidence supporting their predictive validity in forecasting later adaptation for samples of both African-American and Caucasian children from both low-income and moderate income families).

We believe that if over the first five years of life, a child develops a sense of trust and security, curiosity and exploration skills, self-regulation and flexibility, then most parents would say "my child is developing positively" and most teachers would say "that child is ready for school". Similarly, if a child over the first five years of formal schooling (in addition to learning how to read, write and think), develops skills to negotiate conflicts in non-aggressive ways and a realistic sense of self as competent and efficacious in both the social-emotional and cognitive-academic spheres of life, once again most parents would say "my child is developing positively" and most teachers would say " that child is ready for middle school/junior high school". In short, we are asserting the face validity of this conceptualization of positive development for parents and teachers. But we don't have to guess at this. We believe face validity of criteria for positive development by parents and teachers is fundamental to the acceptance of these indicators, both by the public and by the policymakers who will use these indicators in making important decisions about resource deployment and the like. Consequently, we strongly recommend that studies of the parent and teacher beliefs and perceptions about criteria for positive development be conducted as part of the further development of indicators of positive development.

There are several other important advantages to this approach to conceptualizing and measuring positive development in early childhood. First and most importantly, it is built on twenty years of theory development and empirical research in child development (Ainsworth, Blehar, Waters & Wall, 1978; Arend, Gove & Sroufe, 1979; Sroufe 1979, 1983; Dodge, 1980, 1986; Mischel & Mischel, 1983; Mischel Shoda & Rodriguez, 1989; Harter, 1983, 1985). We understand the nature of those phenomena better than we did 10 and 20 years ago; each of these phenomenon are still the objects of intensive scientific investigation, so that theory and measurement will continue to advance; there is a growing cadre of young scientists working on these issues and interested in social policy toward children and families who are technically prepared to help make the methodological advances We will describe in the next section. For all those reasons, they seem like good concepts on which to focus intensive measure development work for use as indicators as defined by Moore (1994).

Second, measures of these concepts permit us to monitor and examine children's development over critical program and policy relevant transitions as defined by Brooks-Gunn et al. (1994). Because of the rapid secular change in population Brooks-Gunn et al. argue for short-term cross sequential designs in policy relevant research on child development. As we read their recommendations, they are arguing for launching multiple cohort studies that overlap every five-to-ten years. The framework and measurement described here enable policy researchers to focus on key processes that are believed to index the quality of adaptation over relatively short periods of time, i.e. over the transition from one developmental stage to the next. It is important to note that because of the stage-salience of particular contexts, this framework has potentially greater policy relevance. The transition from toddlerhood to the preschool years increasingly involves the transition from less formal child care to more formal preschool education. And the transition from the preschool to the early school age years involves the transition to formal elementary education. Variation in the quality of inputs from each of these contexts and how such variations effect development are the key policy and program relevant questions for which many policy researchers and policymakers want to use indicator systems. In our opinion, these uses are facilitated by the perspective on positive development adopted in this paper.

A third and final advantage to this approach to conceptualizing and measuring positive development is that it helps tell a story to the public and to policymakers about what is important in development. While we may or may not want teachers to teach to the test, we certainly want policymakers and program developers/mangers to program to the indicators of positive development. Because of the causal links that scientific research is establishing between those measures of early adaptation and children's future life chances, it is likely that if programs and policies cause these indicators of positive development to improve than this will forecast other improvements in indicators of policy relevant outcomes in the future.

This conceptualization of "positive development" is not offered as the final word but rather as a starting point for discussion among those interested in improving childhood social indicators. It, no doubt, will benefit from considerable debate which will result in important modifications.

IV. Recommendations for Methods to Improve Indicators of Positive Development in Early Childhood

In this last section, we will address the methological issues of how we can proceed to improve indicators of positive development in early childhood. As we indicated earlier, an advantage to basing our conceptualization of positive development on these constructs is that they have already been successfully operationalized using labor-intensive, high fidelity laboratory procedures. As we have learned more about the nature of these phenomena and as new investigators have begun to wish to use measures of these constructs in large-scale fidelity studies, a productive pressure is mounting to translate laboratory-based measures of key constructs in child development into survey-usable measures.

One example will help illustrate this point. In the early, and mid 1980's, Dodge and his colleagues conducted very fruitful research on the developmental processes underlying individual differences in children's aggressive transactions with peers. They hypothesized that processes like how children interpret the intentions of peers in ambiguous situations (attributions of hostile vs. nonhostile intent) and children's social problem solving skills (competent/prosocial vs. incompetent/aggressive) explained why some children responded to provocations by peers in an extremely aggressive manner and some did not. (Dodge, 1980, 1986). To test these hypotheses derived from their social information processing theory of the development of aggression, they developed several intensive lab based procedures for the assessment of children's attributions of hostile intent and social problem solving skills. These procedures involved presenting children with videotaped recordings of peer interactions and expertly probing them on how they interpreted the intentions of the children in the tapes (hostile vs. nonhostile) and their behavioral response if they were in the interaction. Children's responses further required expert coding. But these results yielded impressive results in support of their hypotheses.

Such labor intensive procedures are feasible in small sample basic research studies but are prohibitively costly in time and money in large sample field research studies. But the utility of the theory and constructs is potentially as high that when large scale evaluations of intervention projects, began to be designed, investigators began the process of trying to develop survey-type formats for assessing those constructs. Thus in order to evaluate an intervention designed to prevent conduct disorder, Dodge and his colleagues have developed and/or adapted field-survey type measures of the same constructs (Dodge & Frame, 1982). Similarly, in designing an evaluation of a large-scale violence prevention initiative in New York City, my colleagues at the National Center for Children in Poverty and I have further adapted the Fast Track survey measures of children's hostile attributional bias and their skills at resolving interpersonal conflicts (Aber, Brown, Jones & Samples, 1995). Pilot data on 200 children in grades 1 through 5 from our violence prevention evaluation indicate that it is possible to develop survey type measures of the same construct with only slightly reduced reliability and sensitivity than the laboratory-based measures but with greatly enhanced feasibility for use in large scale field studies.

Not all efforts to cross-walk survey measures and laboratory measures of the same construct have been as successful as the story of the measures of hostile attributions and conflict resolution skills described above. Efforts to develop good survey-type measures of developmental processes for use in studies like Children of the NLSY have met with mixed results. Similarly, my attempts to adapt laboratory measures of parenting processes for use in large-scale evaluation of social programs have also met with mixed results (Aber, Berlin, Brooks-Gunn & Carcagno, 1994). Nonetheless, the experience with the Dodge measures extend the hope that careful work can yield better measures of critical constructs. We now turn to a set of concrete recommendations about how to learn from selected efforts at translating good laboratory measures into good survey measures to improve indicators of positive development.

1. Accept the challenge of continuing to find ways to elicit information directly from children. They are the most important data source of information on how they are negotiating stage-salient tasks. Multiple sources of data for these constructs are ideal, but any system is incomplete without direct assessment of children. If we accept this challenge and not try to get this information in a less valid way, necessity may become the mother of invention (as it has in the Dodge work).

2. Make the methods to elicit information from the children interesting, compelling, relevant, understandable. Don't survey children as if they are little adults. Build on the growing body of

practice wisdom on how to engage children in assessments. Besides Dodge's use of compelling videotapes as stimuli, other methods are proliferating, for instance the use of blue and yellow puppets who make contrasting statements that children decide which is more like them (Eder & Mangelsdorf, 1990).

3. To make methods more compelling, accessible, etc., make creative use of increasingly inexpensive and powerful modern technologies in field research like small, hand-held VCR's (to present stimuli) and small lap-top computers (both to present questions and record responses).

4. Plan to spend more time assessing children than adults; similarly, plan to spend more time training field researchers to work with children than with adults. The time increases only by a factor of 2 or 3 per unit of information. Resist the temptation to get more efficient by asking adults what you should be asking children.

5. Use multiple methods to improve how we ask questions (A) Contextualize judgments we ask children and parents to make by asking them "if...then" statements. Questions that take the form "If provoked, I get angry : (1) never, (2) sometimes, (3) often, (4) always" are much more likely yet highly predictive responses then questions that don't properly contextualize the judgment (Mischel & Shoda, in press). (B) Simplify response judgments that need to be made by children. Rather than ask them to rate something on a four point scale, use two dichotomous judgments.

For example:	
"Some children are happy"	"Some children are sad"

Are you more like the happy children or more like the sad children? Are you like the X child or only sort of like the X child? (C) Consider teaching children the skills they need to respond to you as part of the assessments. For example, for children who can't read but can recognize forms, "This says YES; this says NO. Now circle yes or no." (D) Consider using response formats that don't require that children know how to read.

		X
		X
	X	X
	X	X
X	X	X
X	X	X
a little	**some**	**a lot**

Combined with powerful theory, and a history of good labor-intensive empirical work on constructs of interest, these recommendations hold the potential of helping us develop improved indicators of positive development for use in consciousness-raising social forecasting and causal modeling. It is time to make a serious investment in the development of such measures if our interest in tracking positive development as well as problematic development in the emergent field of childhood social indicators is to move from rhetoric to reality.

V. Conclusion

In this paper, we argued that indicators of positive development in early childhood need to balance the current emphasis on indicators of problematic development. Further, we argued that the major drawback to development of indicators of positive development is the lack of a shared conception of positive development that is: rooted in good theory; supported by empirical evidence; face valid with parents, teachers and policymakers; and able to be operationalized not just in the laboratory using labor intensive, high fidelity techniques but also in the field using creative adaptations of survey techniques. We preposed "success in negotiating a finite series of stage-salient developmental tasks" as meeting the above criteria since (1) it is currently strongly rooted in good theory and has received empirical support in numerous small sample studies, and (2) it has the potential to being perceived as face valid by parents, teachers and policymakers and could be operationalized using survey research techniques. The future of this feature of the larger effort at developing better indicators of child well-being hinges on investments in creative measure development and validation work.

We do not want to slow the train. We do want to encourage us to identify the very best currently available measures of positive development in early childhood. But we also want us to face up to the important tasks of concept and measure development like those described above if we really want a better child well-being indicator system by 2004 A.D.

Table 1

Conceptualizing Positive Development as a Series of Stage-Salient Developmental Tasks to be Negotiated.

Transition between Stages	Age-Range	Developmental Task
Infancy/toddlerhood	0-3	Develop trusting relationships with primary caregivers and a sense of basic security.
toddlerhood/preschool	2-5	Become actively curious, deeply explorative and inquisitive.
preschool/early school age	4-7	Develop the ability to self-regulate thoughts, behaviors and emotions and to flexibly adjust the level of regulation/control to the demands and opportunities of different and changing contexts.
early school age/middle childhood	6-9	Develop the skills to negotiate conflicts and solve interpersonal problems in non-aggressive ways.
middle to late childhood	8-11	Consolidate a sense of self as competent and efficacious, in both social and academic spheres of life.

Table 2

Current methods available to assess children's

success in negotiating stage-salient tasks.

	Construct	Method	References
0-3	Security	Strange Situation (lab)	Ainsworth et al., 1978
		Home based Q-sort (parent rating)	Waters & Deane, 1985
		Center based Q-sort (caregiver rating)	Aber & Baker, 1990
2-5	Curiosity	Curiosity Box	Arend, Gove & Sroufe, 1979
4-7	Self-regulation	Waiting game (lab)	Mischel, et al., 1983 & 1989
		California Q-sort (parent or caregiver rating)	Block & Block, 1969 &1980
6-9	Interpersonal negotiation & problem-solving skills	Attributional bias scale (child assess)	Dodge & Frame, 1982
		Social Problem-solving measure (child assess)	Lochman & Dodge, 1994
8-11	Self-efficacy/competence	PCCS (child assess)	Harter, 1983 & 1987

REFERENCES

Aber, J.L. & Baker, A. (1990). Security of attachment in toddlerhood: Modifying assessment procedures for joint clinical and research purposes. In M. Greenberg, D. Cicchetti & M. Cummings (Eds.), Attachment in the Preschool Years. Chicago: University of Chicago Press, 427-460.

Aber, J.L., Berlin, L., Brooks-Gunn, J. & Carcagno, G. (in preparation). The "Interactions and Developmental Processes" Study of the Teenage Parent Demonstration Project: Final Report.

Aber, J.L., Brown, J., Jones, S. & Samples, F. (1995, in preparation). Adapting measures of children's beliefs, attributions and skills for use in the evaluation of violence prevention projects.

Ainsworth, M., Blehar, M.C., Waters, E. & Wall, S. (1978). Patterns of attachment: A psychological study of the strange situation. Hillsdale, N.J.: Erlbaum.

Alexander, K., Entwisle, D. & Dauber, S. (1993). First-grade classroom behavior: Its short- and long-term consequences for school performance. Child Development, 64(3), 801-814.

Arend, R., Gove, F. & Sroufe, L.A. (1979). Continuity of individual adaptation from infancy to kindergarten: A predictive study of ego-resiliency and curiosity in preschoolers. Child Development, 50, 950-959.

Belsky, J., Hsieh, K. & Crnic, K. (under review). Infant positive and negative emotionality: One dimension or two.

Block, J.H. & Block, J. (1969). The California Child Q-set. Unpublished manuscript. Department of Psychology, University of California Berkeley.

Block, J.H. & Block, J. (1980). The role of ego control and ego resiliency in the organization of behavior. In W.A. Collins (ed.), Minnesota Symposium on Child Psychology, 13, 39-101. Hillsdale, N.J.:Erlbaum.

Brooks-Gunn, J., Brown, B., Duncan, G. & Moore, K. (1994). Child development in the context of family and community resources: An agenda for national data collections. Paper prepared for workshop, "Integrating Federal Statistics on Children," organized by the National Research Council's Committee on National Statistics and the Board on Children and Families, March 31-April 1, 1994.

Hamburg, B.A. (1990). Life skills training: Preventive interventions for young adolescents. Carnegie Council on Adolescent Development, Washington, D.C.

Center for the Study of Social Policy, Annie E. Casey Foundation (1994) Kids Count Data Book: State Profiles of Child Well-Being. Washington, DC: Center for the Study of Social Policy.

Connell, J., Aber, J.L. & Walker, G. (1994). Using social science research to inform the design and evaluation of comprehensive community initiatives for children and families: A case study from the youth field. In J. Connell, A. Kubisch, L. Schorr & C. Weiss (Eds.), Evaluating Comprehensive Community Initiatives.

Dodge, K.A. (1980). Social cognition and children's aggressive behavior. Child Development, 51, 162-170.

Dodge, K.A. (1986). A social information-processing model of social competence in children. In M. Perlmutter (Ed.), Minnesota symposium on child psychology (Vol. 18, pp. 77-125). Hillsdale, NJ: Erlbaum.

Dodge, K.S. & Frame, C.L. (1982). Social cognitive biases and deficits in aggressive boys. Child Development, 53, 620-635.

Eder, R. & Mangelsdorf, S.C. (1990). The emotional basis of early personality development: Implications for the emergent self-concept. In S. Briggs, R. Hogan & W. Jones (Eds.), Handbook of Personality Psychology, Academic Press: Orlando, Fla.

Entwisle, D. & Alexander, K. (1993). Entry into school: The beginning school transition and educational stratification in the U.S. Annual Review of Sociology, 19, 401-423.

Erikson, E. (1950). Childhood and Society. New York: Norton.

Harter, S. (1983). Competence as a dimension of self-evaluation: Toward a comprehensive model of self-worth. In R. Leahy (ed.), The Development of the Self. New York: Academic Press.

Harter, S. (1985). Self-perception profile for children. Unpublished manuscript, University of Denver, Denver, Colorado.

Kopp, C.B. (1982). Antecedents of self-regulation: A developmental perspective. Developmental Psychology, 18(2), 199-214.

Lochman, J.E. & Dodge, K.A. (1994). Social cognition processes or severely violent, moderately aggressive and non-aggressive boys. Journal of Consulting and Clinical Psychology, 62, 366-374.

Love, J. (in press). Indicators of problem behaviors and problems in early childhood. Institute for Research on Poverty Special Report, Conference on Indicators of Children's Well-Being.

Love, J., Aber, J.L. & Brooks-Gunn, J. (1994). Strategies for assessing community progress toward achieving the first national education goal. Mathematica Policy Research, Inc., Princeton N.J.

Mischel, W. & Mischel, H.N. (1983). Development of children's knowledge of self-control strategies. Child Development, 54, 603-619.

Mischel, W., Shoda, Y. & Rodriguez, M. (1989). Delay of gratification in children. Science, 244, 933-938.

Mischel, W. & Shoda, Y. (in press). A cognitive-affective system theory of personality: Reconceptualizing the invariances in personality and the role of situations. Psychological Review.

Moore, K. (in press). New social indicators of child and family well-being. Institute for Research on Poverty Special Report, Conference on Indicators of Children's Well-Being.

Morris, P., Aber, J.L. & Brooks-Gunn, J. (in preparation). Contributions of parenting styles to the cognitive school readiness of poor, African-American preschool children.

Pittman, K. & Cahill, M. (1992). Youth and caring: The role of youth programs in the development of caring. Commissioned paper for the Lilly Endowment research grant projects on youth and caring. Presented at the Youth and Caring Conference, February 26 & 17, Miami, Fla.

Sroufe, A. (1979). The coherence of individual development: Early care, attachment and subsequent developmental issues. American Psychologist, 34, 194-210.

Sroufe, A. (1983). Infant-caregiver attachment and patterns of adaptation in the preschool: The roots of maladaptation and competence. In M. Perlmutter (ed.), Minnesota Symposium on Child Psychology, 16, 41-83. Hillsdale, N.J.: Erlbaum.

Takanishi, R., Mortimer, A.M. & McGourthy, T.J. (1994). Positive indicators of adolescent development: Redressing the negative image of American adolescents. Paper prepared for the Conference on

Indicators of Children's Well-Being, Bethesda, MD., November 17-18, 1994. Carnegie Council on Adolescent Development, Carnegie Corporation of New York.

Waters, E. & Deane K. (1985). Defining and assessing individual differences in attachment relationships: Q-methodology and the organization of behavior in infancy and early childhood. In E. Waters & I. Bretherton (Eds.), Growing points in attachment theory and research. Monographs for the Society for Research in Child Development, 50, 41-65.

Zigler, E. & Trickett, P. (1978). IQ, social competence, and evaluation of early childhood intervention programs. American Psychologist, 38(9), 789-798.

DRAFT

INDICATORS OF PROBLEM BEHAVIORS AND PROBLEMS IN EARLY CHILDHOOD

John M. Love
Mathematica Policy Research, Inc.
P.O. Box 2393
Princeton, NJ 08543
(609) 275-2245

October 6, 1994

Discussion draft prepared for the Conference on Indicators of Children's Well-Being, sponsored by the Institute for Research on Poverty; Child Trends, Inc; the Office of the Assistant Secretary for Planning and Evaluation (U.S. Department of Health and Human Services); the National Institute of Child Health and Human Development; and the Annie E. Casey Foundation. Rockville, MD, November 17-18, 1994.

INDICATORS OF PROBLEM BEHAVIORS AND PROBLEMS IN EARLY CHILDHOOD

In one brief seven-year span, between 1981 and 1988, the proportion of young people receiving treatment for emotional or behavioral problems increased by more than 50 percent (Zill and Schoenborn 1990). The implications of this rise for our families, schools, and communities lead to increasing concerns with problem behaviors and other problems exhibited by America's children. Unfortunately, what we know about these aspects of children's well-being is inconsistent and incomplete. As this paper shows, our understanding of children's problem behaviors and problems from a national perspective is limited by the nature of the questions asked in national surveys, the sampling and timing of the surveys, and our ability to interpret data from varied contexts. This paper summarizes the state of the indicators of problem behaviors and problems in early childhood, evaluates their limitations, suggests ways to improve measurements, and discusses future use of an improved set of indicators.

This paper is purposely limited in scope. It is limited to concerns about young children, from birth to preadolescence (although, in practical terms, we know most about indicators for children at the lower end of that age range). My review of indicators is also limited to the five major national surveys that currently--or recently--have collected information on problems in early childhood and behavior problems of young children. Other research on problems is mentioned primarily to show the importance of particular problems and to justify the use of particular indicators on a national level. Unfortunately, I have found little information on statewide indicators of problems and problem behaviors, other than the broad major problem indicators included in the annual KIDS COUNT data books: percent low-birthweight babies, infant mortality rate, child death rate, percent children in poverty, and percent in single-parent families (Annie E. Casey Foundation 1994).[1]

The scope of problem behaviors and other problems in young children is potentially enormous. The literature review presented here is highly selective and is not intended to be comprehensive at this stage. I use the shorthand term, "problems," to refer to both behavioral problems (such as aggressiveness or withdrawn behavior) and other kinds of problems (such as emotional or cognitive disabilities).

Two major problems facing today's young people are violence and drugs. Both are sensitive issues and are not asked about in the major surveys of young children reviewed here. To accurately learn about the use of illegal substances requires very specialized skill in question design and interviewing. Perhaps, for that reason, questions on this topic have not been included in these surveys. It is also true, fortunately, that drug use is not a large problem with children under the age of 11 (although the problem appears to be increasing among preadolescents). Violence is something that happens to children with high and increasing frequency. In 1993, public social service and child protective agencies received about 3 million reports of abuse and/or neglect (American Humane Association 1994), three times the number reported in 1980. More than one-third of the reports were substantiated. Other forms of violence, as well as increases in homelessness, hunger, and poverty, all qualify as serious problems in early childhood (Children's Defense Fund 1994). Growing up in a single-parent family, especially when combined with poverty, teenage parenting, and other problems, may constitute an early childhood problem that warrants our attention beyond the overall rates documented in KIDS COUNT. These problems--along with problems of physical health that are dealt with by other authors--are beyond the scope of this paper. I focus here on problems that are reflected in the behavior or development of children.[2]

---

[1] The other five KIDS COUNT indicators pertain to adolescence: births to single teens, juvenile violent crime arrests, high school graduation rate, percent teens not in school or labor force, and teen violent death rate.

[2] If it would be useful in meeting the overall purposes of this conference, I am open to broadening the scope of this paper in preparing the revised version.

IDENTIFYING THE MOST IMPORTANT INDICATORS OF PROBLEM BEHAVIORS AND PROBLEMS IN EARLY CHILDHOOD

For a conference on children's well-being, one could ask why papers that focus on "problems" are included. One answer may be that behaviors representing the flip side of well-being are relatively easy to define and measure. Another response, however, is that problems are attention-getting--the public, politicians, and policymakers readily respond to "report cards" of well-being if they include alarming rates of problems that directly affect the public or public institutions, such as schools and courts. Furthermore, problems often have clear costs associated with them. An argument can be made that actions to eliminate or reduce the problems are warranted because of the cost savings to society--and this can be done without appealing to the more nebulous benefits of improving indicators of positive well-being.

There are several systematic ways to think about why a system of indicators of children's well-being should include measures of problems, or the negative side of well-being, and which indicators are the most important to measure. There are at least four considerations. It would be important to measure problems if:

1. The prevalence of the problem (or an increase it its prevalence), in and of itself, raises concerns among policymakers and practitioners working with children and families in the areas of education and social programs. (For example, the prevalence of aggressive behavior among 5-year-olds may alert schools to the need to modify programs or prepare teachers to help the children adjust to the social and academic demands of kindergarten).

2. The problems reflect (or are markers of) the experiences of children and the circumstances in which they live. (For example, anxiety and depression may tell us something about the emotional support available in children's families or about the stresses families face.)

3. The problems help us understand a broader range of children's well-being. (For example, the prevalence of disabilities may inform us about children's school performance, or emotional problems may be associated with children's social competence with their peers.)

4. The persistence, incidence, or prevalence of problems allow us to predict important events later in children's lives. (For example, dropping out of school, drug use, crime, suicide, and intrafamily violence may be foreshadowed by high rates of behavior problems earlier in life.)

Research with young children provides an important backdrop to considerations of state-level or national indicators. I next review evidence related to these four considerations. Although many of the studies reviewed are based on relatively small samples, it is the emerging pattern of relationships that is important for guiding directions for indicator development.

The Prevalence of Behavior Problems Raises Concerns

The prevalence of developmental delays, learning disabilities, emotional and behavioral problems, and various combinations of problems led Zill and Schoenborn (1990) to conclude that these are "among the most prevalent chronic conditions of childhood and adolescence" (p. 8), with nearly 20 percent of 3- to 17-year-olds having one or more of these conditions (that is, about 10.7 million youngsters). Furthermore, Zill and Schoenborn expressed concern that these figures may, in fact, underestimate the true prevalence due to parents confusing or not recognizing the terminology used. On the basis of analysis of data from the National Health Interview Survey of Child Health (NHIS-CH) conducted in 1988, Zill and Schoenborn reported the following percentages of children and youth, 3 to 17 years of age, having:

- Delays in growth or development: 4.0 percent

- Learning disabilities: 6.5 percent
- Significant emotional or behavioral problems: 13.4 percent
- Ever received treatment or counseling for these conditions: 2 percent for developmental delays, 5 percent for learning disabilities, and over 10 percent for emotional or behavioral problems.

In the broadest terms, there is support for these percentages in a recent review by Benasich et al. (1994). They present evidence from smaller-scale surveys to show that between 15 and 18 percent of children have mild to moderate behavior problems (for example, Links 1983), with perhaps an additional 7 to 10 percent having moderate to severe problems: "thus, about one-quarter of all children may be identified as having some form of behavior problems" (Benasich et al. 1994).

Behavior problems are also important in our society because their presence in children affects the way the children are judged by important adults in their lives. For example, in its survey of kindergarten teachers about school readiness, the Carnegie Foundation for the Advancement of Teaching found that 43 percent of the teachers considered lack of emotional maturity as a serious problem for those children who entered school not ready to learn (Boyer 1991).

Behavior Problems Reflect Children's Life Circumstances

There is considerable evidence that the prevalence of behavior problems in young children is a direct function of the quality of children's family life and their experience in early care and education programs. Hagekull and Bohlin (1993), for example, reported that externalizing (aggressive) behaviors in 4-year-olds (measured on the Behar and Stringfield Preschool Behavior Questionnaire) were less frequent when the children lived in home environments of higher quality, as measured by the Home Observation for Measurement of the Environment (HOME) instrument, but were not related to the quality of the children's child care environments. Internalizing (withdrawn) behavior problems declined and positive behaviors increased as a function of both higher-quality home and child care environments. In general, higher-quality environments contributed to fewer problems and more positive behaviors. Caruso and Corsini examined behavior problems in a random sample of 2-year-old children enrolled in child care programs in four Connecticut communities. Using the Child Behavior Checklist (CBCL) developed by Achenbach et al. (1987), Caruso and Corsini found scores on externalizing and internalizing problems that were lower (more favorable) than the norms developed by Achenbach. This finding is perhaps attributable to the higher socioeconomic status of the population sampled in Connecticut. Problem behaviors were not associated with any of the child care variables studied (including number of different arrangements and child-staff ratio).

Using data from the 1986 mother and child supplements to the National Longitudinal Survey of Youth (NLSY), Parcel and Menaghan (1994) found that behavior problems, measured by the Behavior Problems Index (BPI), were fewer when mothers of 4- to 6-year-old children had stronger locus of control and provided stronger home environments. Furthermore, an unstable marriage during the child's first three years was associated with more behavior problems; problems were fewer when the child's mother was currently married. Maternal depression and stressful life events also are often associated with increases in child behavior problems (Fergusson et al. 1985). This appears to be true whether the mother or the child's teacher is completing the ratings (Benasich et al. 1994).

Luster and McAdoo (1994) analyzed NLSY data on African American children between 6 and 9 years of age. They found scores on the BPI to reflect children's exposure to an accumulation of risks. They analyzed "risks" that included lower levels of maternal education and intelligence, low maternal self-esteem, poverty, large family, and less-supportive home environments. African American children with five or more risk indicators present were three times as likely to be at the extreme end of the antisocial dimension of the BPI than children with no risk factors.

Some studies find social class differences in the incidence of behavior problems, with children of lower socioeconomic status exhibiting higher problem scores, although such differences may be more likely to appear as children get older (Benasich et al. 1994). Gender differences also appear in the literature, with boys showing higher rates than girls, although not all studies find this difference (Caruso and Corsini 1994). These two findings raise questions about the generalizability of ratings across various subgroups, a point I return to later in the paper.

The prevalence of behavior problems also reflects the much earlier experiences of children. A very recent study found that the school-age behavior of children shows the deleterious effects of extremely low birthweight (ELBW), that is, less than 750 grams. Hack et al. (1994) found that, compared with children born at full term, the ELBW children had significantly more behavioral and attention problems, and poorer social skills and adaptive behavior, at 6 to 7 years of age.

Behavior Problems Help Us Understand Other Aspects of Child Well-Being

Children with aggressive behavior problems are likely to have persistent problems with school achievement. Such children consistently demonstrate delayed language development (Stevenson and Richman 1978). A study of British 3-year-olds found that children with language delays exhibited behavior problems four times greater than those of nondelayed children (Richman 1977). Studies of older children with delayed language development find similar linkages with problem behaviors, including later juvenile delinquency (Benasich et al. 1994; Earls 1987; Furstenberg et al. 1987; and Robins 1966). Denham and Burger (1991) found that preschool teachers' ratings of young children's affective and behavioral social-emotional competence, especially anger and sadness, were associated with social-emotional competence as rated by the teachers. Maladaptive behavior in preschool children has been related to earlier problems in forming attachments (Egeland et al. 1990; and Erickson et al. 1985).

Behavior Problems Predict Later Outcomes for Children

Cooper and Farran (1988) studied two classes of behavior problems: (1) interpersonal skills, including physical and verbal aggressiveness and disruptiveness; and (2) work-related skills, such as disorganization, dependence, distractibility, and noncompliance with directions. Having low interpersonal skills and low work-related skills constituted significant risks for placement in special education and retention in grade (two aspects of "maladjustment" in this study), but problem behaviors associated with classroom work were far more important in predicting maladjustment than were interpersonal skills.

Behavior problems identified at one age may be predictive of problems (or absence of problems) later in life (Fagot 1984). Using data from the New York Longitudinal Study, Cameron (1978) found that scores on a measure of temperament in the first year of life predicted mild (but not more severe) behavioral problems later. In a longitudinal study of 190 at-risk children, Sroufe and Egeland (1989) found an especially strong link between aggressiveness in preschool youngsters and later problem behavior.

Children who display behavior problems in the early grades have poorer achievement outcomes later on (McKinney and Speece 1986). On the other hand, preschool children who are depressed, anxious, or withdrawn are at risk of a difficult adjustment to school (Brooks-Gunn and Petersen 1991; Gjerde and Block 1991; Petersen et al. 1993; and Rutter et al. 1986).

Which Indicators Are Most Important?

The research just reviewed does not provide clear empirical evidence for identifying the most important indicators. Rather, each study suggests some reason for valuing information on the particular problems or behaviors on which the study focused. The choice of indicators is ultimately a judgment call, and a political judgment at that. The choice should be based on which indicators policymakers believe provide the most useful information for program planning and resource allocation. I have suggested that the decision on the most important indicators may be guided by concerns raised by the problem's prevalence and the knowledge that data on the problems may help us understand children's life circumstances or other aspects of their well-being, or predict later outcomes. Research on problems in early childhood suggests that the dimensions of the problems--

or the measurement constructs--fall into six categories: (1) emotional well-being; (2) behavior problems; (3) school-related problems; (4) problems with the law; (5) developmental delays and disabilities; and (6) problems associated with child rearing.

In my judgment, the most important indicators fall in three areas: (1) behavior problems; (2) school-related problems; and (3) developmental delays and disabilities. Emotional well-being is an important problem area, but its measurement is more difficult (as discussed later in connection with specific surveys). For the purposes of community, state, or national indicators, reports from existing data systems can more efficiently indicate problems with the law. Problems associated with child rearing--such as running away from home or being difficult to raise--are interesting to know about, but should have lower priority for investing measurement resources, at least on a national scale.

WHICH INDICATORS ARE NOW MEASURED AND HOW WELL ARE THEY MEASURED?

A review of the major national surveys provides additional perspective on these priorities. After discussing which indicators are currently measured, I turn to an analysis of how well they are measured.

What is Currently Measured?

Five major surveys have measured problem behaviors and problems of young children in some way:

1. National Household Education Survey (NHES)
2. National Survey of Children (NSC)
3. National Longitudinal Survey of Youth: Child-Mother Data (NLSY-CM)
4. National Survey of Families and Households (NSFH)
5. National Health Interview Survey--Child Health Supplement (NHIS-CH)

Two of these surveys--NSC and NSFH--have no current plans for further data collections. Their contents may be of interest, however, in providing historical comparisons with future surveys.[3] Table 1 summarizes the relative emphasis that the five surveys place on key dimensions of early childhood problems and problem behaviors. Table 2 provides detail on the variables included in these surveys. As might be expected, in contrast with the research literature, the surveys focus on narrower bands of behaviors and problems. Even so, the three ongoing surveys offer rich sources of data, with differing emphases but with considerable collective breadth.

The single richest source of data is NHIS-CH. It has extensive questions on emotional well-being that include the age at which the parent first noticed an emotional or behavioral problem, whether treatment has been obtained, and how disruptive the problem has been for the child's schooling. NHIS-CH includes a 32-item version of the BPI, with the standard 28 items administered when the focal child is between the ages of 5 and 12. It includes more questions than NHES:95 on the school-related problems of grade repetition or retention, school contacting parent about child problems, and suspensions or expulsions, perhaps because the NHIS-CH sample encompasses an older group of children.[4]

NLSY-CM is a major source of national data on children's development and achievement in areas relevant to school success, but contains relatively little in the problem behavior areas. It includes a temperament scale, with a few items that could be analyzed independently as problem indicators. It also includes the complete BPI and reports the usual six subscale scores (see Table 2). NLSY-CM contains no questions related to problems associated with school or developmental disabilities.

---

[3] There is a possibility that NSFH will be resurrected for another round of data collection in the near future.

[4] NHIS is also fielding a survey of children with disabilities in 1994-1995 that is not included in this review. The revised paper will contain a description of this survey.

TABLE 1

RELATIVE EMPHASIS FIVE SURVEYS GIVE TO SIX AREAS OF PROBLEMS IN EARLY CHILDHOOD

Area	NHES:95	NSC	NLSY-CM	NSFH	NHIS-CH
Emotional well-being	0	x	x	x	X
Behavior problems	0	x	X	x	X
School-related problems	X	X	0	X	X
Problems with the law	0	x	0	x	0
Developmental delays and disabilities	X	0	0	0	x
Child-rearing problems	0	x	0	x	0

Note: Key to symbols: 0 = no questions related to the area; x = some questions; X= major emphasis among survey questions.

[a]xxx

[b]xxx

*Significantly different from zero at the .10 level, two-tailed [or one-tailed] test.
**Significantly different from zero at the .05 level, two-tailed [or one-tailed] test.
***Significantly different from zero at the .01 level, two-tailed [or one-tailed] test.

TABLE 2

EARLY CHILDHOOD PROBLEM VARIABLES INCLUDED IN MAJOR SURVEYS

	National Household Education Survey: 1995	National Survey of Children	National Longitudinal Survey of Youth: Child-Mother Data	National Survey of Families and Households	National Health Interview Survey: Child Health Supplement
Year Begun	1991	1976	1986	1987-1988	1981
Sample Sizes and Children's Ages	1993: 4,423 parents of preschoolers; 2,126 parents of kindergartners, 4,277 parents of primary school children; 62 parents of home school children	1976: 2,301; 7-11 years of age (Later years followed up with children when they were adolescents and young adults)	1986: 4,971; 0-18 years of age 1988: More than 6,000, 95 percent less than 10 years of age	7,926; age 5 and older	15,416; birth to 17 years of age
Collection Frequency	1991, 1993, and then annual, with rotating topical focus	1976, 1981, 1987	Biennial	1987-1988 1992-1993	Annual NHIS, but child supplement added in 1981 and 1988
Survey Type	Telephone interviews	1976: In-person and self-administered	In-person interviews	In-person interviews Self-administered survey	In-person interviews
Respondents	Parents of children ages 3 through 7 years	Children Parent most knowledgeable about child, constituting national stratified probability sample Self-administered teacher questionnaires	Women respondents of National Longitudinal Survey of Work Experience of Youth	Adult Adult's spouse/partner Focal children 5 years of age or older	Most knowledgeable adult 1 child, 0-17 years of age
Design	Cross-sectional	Longitudinal	Longitudinal	Cross-sectional	Cross-sectional
Next Collection Planned	Spring 1995	None planned	1995	Perhaps 1996 or 1997	1996

	National Household Education Survey: 1995	National Survey of Children	National Longitudinal Survey of Youth: Child-Mother Data	National Survey of Families and Households	National Health Interview Survey: Child Health Supplement
Emotional Well-Being Indicators 1. Rating Scales		Child feels lonely? Fights or argues with brothers/sisters? Scale similar to BPI: - Shyness - Antisocial behavior - Hyperactivity	Temperament scales: 0-23 months: - Irritability - Difficulty (composite) - Negative hedonic tone - Fearfulness 24-83 months: - Insecure attachment Behavior Problems Index (32 items) - Total score, plus: - Antisocial - Anxious/depressed - Headstrong - Hyperactive - Dependent - Peer conflict	Age 4 and under Statements rated often, sometimes, or not true: - Is fussy or irritable - Loses temper easily - Is fearful or anxious - Bullies, or is cruel or mean to others Ages 5-11: All of above except "fussy or irritable" plus: - Is unhappy, sad, or depressed	Behavior Problems Index (32 items)

	National Household Education Survey: 1995	National Survey of Children	National Longitudinal Survey of Youth: Child-Mother Data	National Survey of Families and Households	National Health Interview Survey: Child Health Supplement
2. Experienced Problems/Received Treatment					Ever had an emotional or behavior problem for 3 months or more? (Y/N) - Age first noticed - Ever received treatment or counseling? - Had treatment or counseling in last 12 months? - No. times talked to doctor, psychologist, or counselor about problem in past 12 months - In past 12 months did problem cause child to miss time from school? - How many days in last 12 months? - Did problem require special classes, school, or special help in past 12 months? - Take any medicine in past 12 months for problem?

	National Household Education Survey: 1995	National Survey of Children	National Longitudinal Survey of Youth: Child-Mother Data	National Survey of Families and Households	National Health Interview Survey: Child Health Supplement
3. Professional Help				Seen doctor or therapist about any emotional or behavior problem? (Y/N) - Age of last occurrence	Ever seen psychiatrist, psychologist, doctor, or counselor about any emotional, mental, or behavior problem? (Y/N) - Last time (more or less than 12 months ago) In past 12 months, felt, or anyone suggested, that child needed help for any emotional, mental, or behavioral problem? (Y/N)
School-Related Problems	Attend 1 or 2 years of kindergarten? (Y/N) Repeat any grade, 1-3? (Y/N) - Which grades? Teacher or school contacted you about behavior problem? (Y/N) Teacher or school contacted you about problems with schoolwork? (Y/N)	Suspended or expelled? Class standing below middle, near bottom? Repeated a grade first time between 1976 and 1981? - Ever repeated? Parent received note about behavior or discipline problem in school? One or two grades behind in 1976?		Repeat grade? (Y/N) - Which grades? Meet with teacher or principal because of behavior problem? (Y/N) - How many times? Suspension or expulsion? (Y/N) - More than once? (Y/N) - Age of last occurrence	Grade repetition for any reason? (Y/N) - Why? Anyone from school ask you to come talk about problems child having? (Y/N) - How long since last time? Ever suspended, excluded, expelled? (Y/N) - How many times? - How long since last time? - For health, behavior, or other reasons?
Law Enforcement		Stolen things more than twice?		Ever been in trouble with police? (Y/N) - More than once? (Y/N) - Age of last occurrence	

	National Household Education Survey: 1995	National Survey of Children	National Longitudinal Survey of Youth: Child-Mother Data	National Survey of Families and Households	National Health Interview Survey: Child Health Supplement
Child-Rearing Problems		How much trouble was child to raise? Ever ran away? - Once? - Two or more times?		Difficult to raise? (Y/N) Run away from home for 1 or more nights? (Y/N) - More than once? (Y/N) - Age of last occurrence - How long gone?	
Disabilities or Developmental Delays	Doctor or health professional told you child has developmental delay? (Y/N) Checklist of disabilities: - Specific learning disability - Mental retardation - Speech impairment - Serious emotional disturbance Does disability affect ability to learn? (Y/N) Receiving services for disability from: - School - Health or social service agency - Doctor or clinic				Ever had delay in growth or development? (Y/N) Ever had a learning disability? (Y/N)

Note: Empty cells indicate that the survey did not include items on that variable.

NHES:95 is the only national survey that puts a heavy emphasis on documenting whether 5- to 7-year-old children have experienced developmental delays and specific learning disabilities--such as mental retardation and speech impairment--or serious emotional disturbance. It documents the nature of these disabilities, whether the child is receiving services for them, and, if so, who provides the services. The survey also contains a number of questions relating to grade retention (K-3) and whether school has contacted a parent about problems with the child's schoolwork or behavior. The emphasis of NHES:95, which will be fielded in spring 1995, will be somewhat different in its 1996 edition (currently under development).

How Good Are Our Indicators?

Moore (1994) has suggested 11 criteria for judging the adequacy of indicators of child well-being. I briefly examine the measures on these surveys in light of these criteria. Moore's first two criteria--comprehensive coverage and positive outcomes--are appropriate for evaluating the total set of indicators. Clearly, indicators of problems are neither comprehensive nor positive. When combined with other indicators considered by the authors of other papers, however, they make important contributions toward a comprehensive set of indicators and allow for assessing both positive and negative aspects of children's development and behavior.

Clear and Comprehensible. The public can easily understand the problem behaviors included in NHES:95, NLSY-CM, and NHIS-CH. Even citizens who do not have school-age children can relate to the concreteness of the school-related problems of repeating grades or being suspended. The general public can also understand the specific disabilities listed on the NHES:95, although there is some danger that terms like "serious emotional disturbance" and "mental retardation" mean different things to different people. In fact, Zill and Schoenborn (1990) note that parents responding to the NHIS-CH may have used the term "learning disability" more broadly than its technical definition.

Common Interpretation. The behavior problems that are most directly grounded in behavioral terms are most likely to have the same meaning across diverse populations or subgroups of the U.S. population. For example, the question, "Has anyone from (child's) school asked you to come talk about problems (child) is having?" is very likely to refer to the same events, whether the responding parent is young or old, African American or white, Northeasterner or Southerner. Indicators based on rating scales are more problematic. The individual items require subjective judgment. A parent's tolerance for an active child is likely to influence whether she or he decides that the child "often" or "sometimes" is "restless or overly active, cannot sit still" (BPI, Item 19, NHIS-CH, 1988). In the case of the BPI, the scales (1) have been widely used, (2) have been tested with many diverse populations, and (3) are interpreted only as scales (for example, "hyperactive") and not as individual items. Unless items have been well tested, it is best to avoid subjective judgments in our indicators.

Some rating scales are not as psychometrically strong as the BPI. The temperament subscales on NLSY-CM, for example, have few items each and, in some cases, low internal consistency (Mott and Quinlan 1991). Thus, not only do the items suffer from possible differential interpretation, the scale scores themselves are not adequately stable for providing the kinds of indicators that will be robust across subpopulations.

Another concern is the term "developmental delay," used in the NHES:95. School personnel and early intervention specialists use a variety of terms in referring to the various "delays" that children with special needs experience. Furthermore, specialists may use different language when talking with parents than they use with their colleagues. Thus, in their attempts to make a diagnosis understandable to a parent, the professional may avoid technical terms that would otherwise provide consistency. Research is needed to determine whether parents with diverse backgrounds will interpret the questions in the same way, and, if not, how the wording can be modified to obtain consistency.

Consistency over Time. Once there is common meaning across varied subgroups, it is important for that meaning to remain constant over time. Among the problems investigated in these surveys, the descriptions of disabilities are those whose terminology is most likely to change. Terms for various categories of disability have changed over the past decades. To use another example from Zill and Schoenborn (1994), the term "mentally retarded" used in the 1981 NHIS-CH produced only a few positive responses, perhaps because of perceived stigma. The terms "developmental delay" and "learning disability" were substituted in 1988, and response rates increased.

Consistency should be considered in the context of both longitudinal and cross-sectional data collections. Because the nature of behavior problems changes as children develop, the same items cannot be used at every age level. In longitudinal designs, this means that observed differences between one collection time and another should not automatically be judged as a developmental change, but interpreted in light of changes in items or dimensions of behavior problems. In cross-sectional designs, care must be exercised in interpreting differences in the seriousness or prevalence of particular problems for, say, 10-year-olds compared with 4-year-olds.

Forward Looking. Moore suggests that our indicators should anticipate the future so that current surveys can provide baseline data for charting trends. The nature of the particular behavior problems measured by a standard scale like the BPI is not likely to become any less important over time. Similarly, as long as the governors and chief state school officers are concerned with the national education goals, school-related problems like those tapped on NHES:95 will capture the public's interest. For poverty, violence, substance abuse, and similar problems, the annual statistics presented by KIDS COUNT and the Children's Defense Fund provide evidence of trends that more detailed national surveys can chart.

Rigorous Methods. A persistent concern about measures of children's behavior problems and other problems is that the information typically is provided by an adult who is presumably knowledgeable about the child. These judgmental ratings have been subjected to some scrutiny in the research literature, and there is considerable evidence that the kinds of questions and scales incorporated in NHES:95, NLSY:CM, and NHIS:CH provide robust indicators. In addition to the reliability and validity studies done in the context of the surveys themselves, researchers have shown that, in general, different adults can agree on their independent ratings of problem behaviors (such as those made with the BPI). For example, Richters and Pellegrini (1989) found that mothers' and teachers' ratings of problem behaviors gave similar pictures--at least to the extent one might expect given that parents and teachers see the children in different contexts. Another indication of rigor (validity) is the extent to which scores on the scales are related to other events or behaviors in understandable ways. Zill (1990) has shown that BPI scores of NHIS-CH children discriminated those who had received psychological help during the past year from those who had not.

All of the surveys reviewed have established rigorous data collection methods. We can be reasonably sure that the procedures are consistent across different time points of the same survey. I do not know, however, the extent to which those responsible for administering NHES:95, for example, have adopted the same procedures for training field staff as used by NHIS-CH.

Geographically Detailed. The surveys reviewed here provide indicators only at the national level. I have not found any state-level surveys obtaining these same data. For community-level indicators, it would be relatively straightforward to administer a small-scale survey, depending on the size of the community. I do not know the extent to which this is being done, but Thornton et al. (1994) describe a set of procedures that could be adopted by community agencies interested in measuring child and family well-being. Questions could be taken from NHES:95, NLSY-CM, or NHIS-CH to create parallel instruments that the staff of local agencies could administer with relatively little training.

Cost-Efficient. The rating scales and questions on young children's problems are straightforward and inexpensive to collect. The most commonly used scale, the BPI, is so widely used it can now essentially be considered a benchmark for other measures. Furthermore, the indicators included on these surveys are generally sound and can be continued into the future with no additional development costs.

Reflective of Social Goals. For young children entering kindergarten, the incidence of behavior problems can provide measures of our country's progress toward achieving the first national education goal that all children will start school "ready to learn." One of the major dimensions of readiness defined by the Goal 1 Technical Planning Group (1993) is social-emotional development. Within that dimension, decreased aggression, anxiety, and depression are reasonable constructs to assess (Love et al. 1994). For school-age children, grade repetitions, suspensions, and expulsions are reasonable indicators for the social goal of quality education for all children.

Adjusted for Demographic Trends. If indicators of children's problems and problem behaviors allow a common interpretation in various population subgroups, there should be no need to adjust for changes in the national population composition over time. Further research is needed before we can know whether this is an issue for the indicators discussed here.

An Additional Consideration. It may be valuable to add another criterion to Moore's list. There is considerable evidence that context is critical for interpreting problem behavior. Although there is some stability over time and across situations in such behavior patterns as aggression and depression, there is also considerable variation. Some children may be more aggressive in the streets of their neighborhood than in the classroom; some are more withdrawn with adults than with peers; some argue with their siblings but cooperate with their teachers. A system of indicators will be more useful for understanding problems in early childhood if it includes extensive data on the contexts in which the behaviors occur. The surveys reviewed here differ widely on this dimension. Both NLSY-CM and NHIS-CH contain a wide range of data on the children and their families, in addition to the problem-oriented variables listed in Table 2. The longitudinal nature of the NLSY-CM data create time-sensitive contextual variables that can greatly enrich interpretations of early childhood problems.

HOW CAN CURRENT MEASURES BE IMPROVED AND NEW MEASURES PRODUCED DURING THE NEXT DECADE?

The NHES could be strengthened by adding a module on behavior problems. At relatively little expense, the BPI items could be added. This would permit analysis of relationships between these important child characteristics and the school-related problems that NHES currently measures. This might help us understand, for example, why some children experience problems in school, and whether there is a relationship between patterns of such characteristics as aggression or antisocial behavior and problems with teachers, expulsions or suspensions, and even repeating grades. NHES could be further strengthened by creating a longitudinal component. If a subsample could be followed up in succeeding years, we could assess relationships between the incidence of behavior problems in preschool, for example, and school problems that appear in second grade.

The NLSY-CM is an extremely rich data source for information on children's development. Because of this paper's focus, the extensive data on children's achievement and positive developmental indicators have not been reviewed. Researchers can use these rich data in combination with NLSY-CM's longitudinal design to address an extremely wide range of important questions about children and families (Zill and Daly 1993). Yet NLSY-CM collects no parent reports of children's school-related problems, such as the NHES:95 items on grade repetitions, school-parent contacts about problems, or disabilities and developmental delays. Adding these questions to NLSY-CM would greatly expand researchers' ability to investigate relationships between problems and positive aspects of child development.

The National Center for Education Statistics, which conducts NHES, is launching a major new longitudinal study, the Early Childhood Longitudinal Study (ECLS). A nationally representative sample of approximately 24,000 kindergarten children will be selected in fall 1998 and followed through about fifth grade.[5] Researchers will conduct direct assessments of children, interview their parents and teachers, and obtain data from school records. A Head Start cohort will also be selected to include about 5,000 children who will enter the ECLS kindergartens. This will make it possible to analyze relationships between preschool experience and later school performance. Because this study is still in the design phase, there may be an opportunity for the Conference on Indicators of Children's Well-Being to influence the measures that are included. Given the importance of problems in early childhood and their potential influence on children's school performance, ECLS could provide an excellent vehicle for learning more about these influences.

---

[5] The study is currently in the design phase. The study team is led by National Opinion Research Center, which has a number of subcontractors working with it, including Child Trends, University of Chicago, University of Michigan, Michigan State University, Educational Testing Service, and Mathematica Policy Research. Jerry West is the NCES project officer.

PRELIMINARY CONCLUSIONS

This review has been too narrowly focused to provide a complete analysis of measures of problems in early childhood. Nevertheless, it is clear that the major national surveys collectively provide a rich source of data researchers can use to study the negative side of children's well-being. At the same time, there are limitations. These surveys provide only limited understanding of young children's problem behaviors and problems for several reasons.

Comparability across surveys is incomplete. Except for the standard BPI and questions on school-related problems that are highly comparable, different aspects of emotional well-being are assessed. For example, only one survey obtains any detailed information on treatment children may have received for emotional or behavior problems.

All of the surveys ask parents (overwhelmingly the mother) about their children's problems. Aside from that commonality, the surveys have different sampling methods and different sample sizes, and obtain information about children of different ages. NLSY-CM and NHIS-CH cover the span from birth to 17 or 18 years of age; NHES:95 and NSC span four-year periods that do not overlap. The former begins at age 3, the latter at age 7.

Contextual information--or data on other aspects of the children's development or their families--is highly variable. NHIS-CH and NLSY-CM have the most extensive background and contextual data, NHES probably the least. The issue of contextual information should be examined more closely in the process of recommending improvements in national data on children's well-being.

References

Achenbach, T.M., C.S. Edelbrock, and C.T. Howell. "Empirically Based Assessment of the Behavioral/Emotional Problems of 2- to 3-Year-Old Children." *Journal of Abnormal Child Psychology*, vol. 15, 1987, pp. 629-650.

American Humane Association. *Child Abuse and Neglect Data*. Fact sheet no. 1. Englewood, CO: AHA, Children's Division, April 1994.

Benasich, April Ann, Jeanne Brooks-Gunn, and Marie C. McCormick. "Behavioral Problems in the Two-to-Five-Year-Old: Measurement and Prognostic Ability." *Journal of Developmental and Behavioral Pediatrics*, 1994 (in press).

Boyer, Ernest L. *Ready to Learn: A Mandate for the Nation*. The Carnegie Foundation for the Advancement of Teaching. Lawrenceville, NJ: Princeton University Press, 1991.

Brooks-Gunn, Jeanne, and A.C. Petersen. "Studying the Emergence of Depression and Depressive Symptoms During Adolescence." *Journal of Youth and Adolescence*, vol. 20, 1991, pp. 115-119.

Cameron, James R. "Parental Treatment, Children's Temperament, and the Risk of Childhood Behavioral Problems: 2. Initial Temperament, Parental Attitudes, and the Incidence and Form of Behavioral Problems." *American Journal of Orthopsychiatry*, vol. 48, 1978, pp. 140-147.

Annie E. Casey Foundation. *1994 KIDS COUNT Data Book: State Profiles of Child Well-Being*. Baltimore, MD: Annie E. Casey Foundation, 1994.

Caruso, Grace-Ann L., and David A. Corsini. "The Prevalence of Behavior Problems Among Toddlers in Child Care." *Early Education and Development*, vol. 5, 1994, pp. 27-40.

Children's Defense Fund. *The State of America's Children: Yearbook 1994*. Washington, DC: CDF, 1994.

Cooper, David H., and Dale C. Farran. "Behavioral Risk Factors in Kindergarten." *Early Childhood Research Quarterly*, vol. 3, 1988, pp. 1-19.

Denham, Susanne A., and Christine Burger. "Observational Validation of Ratings of Preschoolers' Social Competence and Behavior Problems." *Child Study Journal*, vol. 21, no. 3, 1991, pp. 185-202.

Earls, F. "Temperament and Home Environment Characteristics as Causal Factors in the Early Development of Childhood Psychopathology." *Journal of the American Academy of Child Adolescent Psychiatry*, vol. 26, 1987, pp. 491-498.

Egeland, B., M. Kalkoske, N. Gottesman, and M.F. Erickson. "Preschool Behavior Problems: Stability and Factors Accounting for Change." *Journal of Child Psychology and Psychiatry*, vol. 31, 1990, pp. 891-909.

Erickson, M.F., LO.A. Sroufe, and B. Egeland. "The Relationship Between Quality of Attachment and Behavior Problems in Preschool in a High-Risk Sample." In I. Bretherton and E. Waters (eds.). "Growing Points in Attachment Through Research." *Monographs of the Society for Research in Child Development*, vol. 5, nos. 1-2 (Serial No. 209), 1985.

Fagot, Beverly I. "The Consequences of Problem Behavior in Toddler Children." *Journal of Abnormal Child Psychology*, vol. 12, 1984, pp. 385-396.

Fergusson, E.M., B.A. Hons, L.J. Horwood, et al. "Family Life Events, Maternal Depression, and Maternal and Teacher Descriptions of Child Behavior." *Pediatrics*, vol. 75, 1985, pp. 30-35.

Furstenberg, Frank F., Jr., Jeanne Brooks-Gunn, and S. Philip Mason. *Adolescent Mothers in Later Life*. New York: Cambridge University Press, 1987.

Gjerde, P.F., and J. Block. "Preadolescent Antecedents of Depressive Symptomatology at Age 18: A Prospective Study." *Journal of Youth and Adolescents*, vol. 20, 1991, pp. 217-232.

Goal 1 Technical Planning Group. "Reconsidering Children's Development and Learning: Toward Shared Beliefs and Vocabulary." Draft Report to the National Education Goals Panel. Washington, DC: National Education Goals Panel, December 1993.

Hack, Maureen, H. Gerry Taylor, Nancy Klein, Robert Eiben, Christopher Schatschneider, and Nori Mercuri-Minich. "School-Age Outcomes in Children with Birth Weights Under 750g." *New England Journal of Medicine*, vol. 331, 1994, pp. 753-759.

Hagekull, Berit, and Gunilla Bohlin. "Quality of Care and Problem Behaviors in Early Childhood." Paper presented at the Biennial Meeting of the Society for Research in Child Development, New Orleans, March 1993.

Links, P.S. "Community Surveys of the Prevalence of Childhood Psychiatric Disorders: A Review." *Child Development*, vol. 54, 1983, pp. 531-548.

Love, John M., J. Lawrence Aber, and Jeanne Brooks-Gunn. "Strategies for Assessing Community Progress Toward Achieving the First National Education Goal." Princeton, NJ: Mathematica Policy Research, Inc., October 1994.

Luster, Tom, and Harriette Pipes McAdoo. "Factors Related to the Achievement and Adjustment of Young African American Children." *Child Development*, vol. 65, 1994, pp. 1080-1094.

McKinney, James D., and Deborah L. Speece. "Academic Consequences and Longitudinal Stability of Behavioral Subtypes of Learning Disabled Children." *Journal of Educational Psychology*, vol. 78, 1986, pp. 365-372.

Moore, Kristin Anderson. "Criteria for Indicators of Child Wellbeing." Washington, DC: Child Trends, Inc., March 1994.

Mott, Frank L., and Stephen V. Quinlan. *Children of the NLSY: 1988 Tabulations and Summary Discussion*. Columbus, OH: Center for Human Resource Research, Ohio State University, March 1991.

Parcel, Toby L., and Elizabeth G. Menaghan. "Early Parental Work, Family Social Capital, and Early Childhood Outcomes." *American Journal of Sociology*, vol. 99, 1994, pp. 972-1009.

Petersen, A.C., B. Compas, J. Brooks-Gunn, M. Stemmler, S. Ely, and K. Grant. "Depression in Adolescence." *American Psychologist*, vol. 48, 1993, pp. 155-168.

Richman, N. "Is a Behavior Checklist for Preschool Children Useful? In *Epidemiological Approaches in Child Psychiatry*, edited by P.J. Graham. London: Academic Press, 1977.

Richters, J., and D. Pellegrini. "Depressed Mothers' Judgments About Their Children: An Examination of the Depression-Distortion Hypothesis." *Child Development*, vol. 60, 1989, pp. 1068-1075.

Robins, Lee N. *Deviant Children Grown Up. A Sociological and Psychiatric Study of Sociopathic Personality.* Baltimore: Williams and Wilkins, 1966.

Rutter, M., C.E. Izard, and P.B. Read (eds.). *Depression in Young People: Developmental and Clinical Perspectives.* New York: The Guilford Press, 1986.

Sroufe, L. Alan, and Byron Egeland. "Early Predictors of Psychopathology and Competence in Children." Paper presented at the Biennial Meeting of the Society for Research in Child Development, Kansas City, MO, April 1989.

Stevenson, J., and N. Richman. "Behavior, Language, and Development in Three-Year-Old Children." *Journal of Autism and Childhood Schizophrenia*, vol. 8, 1978, pp. 299-313.

Thornton, Craig V., John M. Love, et al. "Comprehensive Strategies for Assessing the Outcomes of Community-Wide Efforts to Support Children and Families." Paper prepared for the Pew Charitable Trusts. Princeton, NJ: Mathematica Policy Research, Inc., October 1994.

Zill, Nicholas, and Margaret Daly (eds.). *Researching the Family: A Guide to Survey and Statistical Data on U.S. Families.* Washington, DC: Child Trends, Inc., 1993.

Zill, Nicholas, and Charlotte A. Schoenborn. "Developmental, Learning, and Emotional Problems: Health of Our Nation's Children, United States, 1988." *Advance Data from Vital and Health Statistics*, Number 190. Hyattsville, MD: National Center for Health Statistics, November 16, 1990.

POSITIVE INDICATORS OF ADOLESCENT DEVELOPMENT: REDRESSING THE NEGATIVE IMAGE OF AMERICAN ADOLESCENTS

R. Takanishi
A. M. Mortimer
T. J. McGourthy

Carnegie Council on Adolescent Development
2400 N Street, NW
Washington, DC 20037

January 1995

This paper was prepared for the Conference on Indicators of Children's Well-Being (November 17-18, 1994) sponsored by the Institute for Research on Poverty; Child Trends, Inc.; the Office of the Assistant Secretary for Planning and Evaluation (U.S. Department of Health and Human Services); the National Institute of Child Health and Human Development; and the Annie E. Casey Foundation.

This paper does not reflect the views of the Carnegie Council on Adolescent Development or Carnegie Corporation of New York. Responsibility for the accuracy of the content of the paper rests with the authors.

POSITIVE INDICATORS OF ADOLESCENT DEVELOPMENT: REDRESSING THE NEGATIVE IMAGE OF AMERICAN ADOLESCENTS

CHANGING VIEWS OF ADOLESCENTS

Prevailing images of American adolescents have clearly shaped decisions about which indicators of their status are systematically collected. No good word or label that denotes the second decade of life in a positive vein currently exists. The word "adolescent" is almost always used in popular discourse to describe immature, irresponsible, and undesirable behavior of individuals, regardless of their age.

The rarity of positive indicators of adolescent development is easily demonstrated. A cursory look at national reports of indicators of adolescent health and education reveals the predominance of negative outcomes (Center for the Study of Social Policy, 1993; Hechinger, 1992; Gans, Blyth, Elster, & Gaveras, 1990). Adolescent indicators represent a preoccupation with social problems, including teenage pregnancy, substance abuse, juvenile delinquency, school dropout, violence, and youth unemployment. While positive indicators of development during adolescence do exist, they remain neglected or overshadowed.

Researchers have contributed to the emergence of more positive images of adolescents in recent years. This view of adolescent development is based on studies involving nonclinical or nontroubled adolescents (Feldman & Elliott, 1990). A major statement reflecting a developmental perspective on early adolescence (ages 10-14) was articulated in the Carnegie Council on Adolescent Development's report *Turning Points: Preparing American Youth for the 21st Century*, which identified desirable strengths and capacities of young adolescents (Task Force on Education of Young Adolescents, 1989). Since that report, a youth development perspective has emerged (Pittman & Wright, 1991). This perspective has contributed to the importance of understanding adolescents' perceptions and views, especially in research about their health (Millstein, 1993), and to a shift from a deficit view of adolescents-as-problems to adolescents-as-resources in program development and implementation (Task Force on Youth Development and Community Programs, 1992).

Two caveats cannot be avoided in an effort to identify positive indicators: (1) the inevitability and the necessity of value judgements, in this case, identifying what is positive and hence desirable, and (2) the recognition that what is considered problematic or desirable is socially constructed within a cultural and historical context (Schlossman & Cairns, 1993). With these two caveats made explicit, this paper views the adolescent years as a critical transition period in the preparation for adult life (Hamburg, 1989).

The status of positive indicators of adolescent development is underdeveloped at this time. The focus on the negative aspects of adolescent development has contributed to neglect of the research base and measurement requirements regarding positive indicators. The prospects for improved indicators can be enhanced by the support of fundamental research into some of these indicators, both in terms of their responsible measurement and on the factors that contribute to observed outcomes.

Research on contributing factors is critical, given the current interest in the linkage of indicators with pressures for public accountability, i.e., concern about outcomes. It is likely that for important indicators, such as educational achievement, both public institutions, such as schools, and private entities, such as families, contribute to measured outcomes. Based on knowledge of multiple factors affecting a given outcome, the allocation of public responsibility for educational achievement is not straightforward and often becomes highly politicized.

Furthermore, the availability of funds for research support and for collection of indicator data by public agencies is not unlimited. Difficult choices must be made. Public agencies already collect indicator data, and alterations in their collection practices will not be simple. Hence, careful consideration must be given to selecting those indicators that are scientifically defensible, publicly meaningful and useful, relatively inexpensive to collect, and limited in number. Moore's (1994) criteria are helpful in this regard, but the challenges of organizational change required for a more current, defensible indicator system at the federal, state, and local levels remain formidable and are not solely driven by scientific considerations. Such change will require the elimination of some existing indicators, the clustering of some indicators based on research, and the addition of new ones.

SELECTED INDICATORS OF POSITIVE ADOLESCENT DEVELOPMENT: OVERVIEW

Csikszentmihalyi and Larson (1984) have made the case that an adolescent's successful transition to adulthood is marked by learning to assume adult roles. Thus, our primary criterion for positive indicators of adolescent development is the attainment of social competency for adult roles and responsibilities. This includes being an educated and productive worker in a global economy; an individual with the knowledge and skills to maintain a healthy lifestyle; a caring family member, whether choosing to be a parent or part of a broader kinship group; and an active participant as a citizen in a democratic, multiethnic society.

In an ideal world with no limits on resources allocated to the production and collection of indicators, other positive indicators might be collected, such as attachment to parents during adolescence or involvement in household maintenance. However, we argue that indicators used for social purposes and supported by public funds should be tied to the desired goals of a society. Throughout this paper, we attempt to attend to the necessity of making hard choices in the selection of indicators of positive adolescent development.

The following overview of selected indicators of positive adolescent development is provided both to describe the possibilities and to identify the current status of their measurement and future prospects. This overview is the basis from which the selection of four indicators of high priority for further development will be made. Candidates for indicators can be roughly assigned to one of three categories: *education and work, health-enhancing behaviors, and preparation for adult roles.*

Indicators of Education and Work

Several indicators of adolescent development in the education and work area are addressed by other papers in this volume. These are *graduation from high school, including literacy,* (Hauser, 1994) *critical thinking and problem-solving skills that enable participation in a high technology, global economy* (Koretz, 1994), and *postsecondary educational aspirations and expectations* (Kane, 1994). To these, we would add *perception of opportunity regarding future adult social and economic status* as an indicator in the education and work category. It appears that the education indicators of positive adolescent outcomes (e.g., educational achievement, aspiration for postsecondary education, attainment of college education) are the best developed by the Moore criteria and most widely used and recognized at the present time.

However, as Hauser (1994) notes, the collection of indicators on high school dropout is often unreliable, misleading, and requires improvement. Kane (1994) makes the very critical point that in modern economies, completion of a high school education is not sufficient for a decent standard of living. For example, the average gap in lifetime earnings between a high school graduate and dropout is $200,000, while the gap for a college-educated and non-college-educated person is $l million (U.S. Bureau of the Census, 1994). Hence, a good case can be made to support Kane's recommendations that monitoring postsecondary education by gender and economic background should be improved immediately, and that resources might be shifted from indicators of high school completion to the postsecondary area.

An adolescent's *perception of opportunity* regarding future adult social and economic status, and the expectation that s/he will attain that status constitute critical indicators of adolescent development and require further study. The U.S. Department of Education currently collects data on educational aspirations, which are one component of perception of the future. Perception of opportunity, however, is not limited to educational goals, but also includes what an individual thinks s/he will be in adult life and what the opportunities are to attain these goals (Wilson, 1993; Elliott, 1993; Wilson, 1987). The research work on "possible selves" is very promising as a basis for developing an indicator of perception of future work roles (Cross & Markus, 1994; Oyserman & Markus, 1993; Oyserman, 1993; Oyserman and Saltz, 1993; Markus & Kitayama, 1991;

Oyserman & Markus, 1990; Oyserman & Markus, 1990). These perceptions contribute to adolescents' decisions to become involved in learning and education, especially in the high school and postsecondary levels (Kane, 1994). These perceptions are linked to social indicators such as educational achievement and involvement in postsecondary education.

Indicators of Health-Enhancing Behaviors

Indicators of adolescent health status have typically focused on mortality and morbidity (Elster, 1994). A review of the adolescent objectives for Healthy People 2000 reveals no positive indicators of adolescent health. In recent years, however, an interest in health promotion during the second decade of life has stimulated discussions about positive indicators of adolescent health (Millstein, Petersen, & Nightingale, 1993). However, the state of the art regarding positive indicators of adolescent health has not kept pace with these recent developments in adolescent health promotion.

Positive indicators of adolescent health, including a *cluster of health-enhancing behaviors and attitudes that promote life-long healthy practices, including positive mental health outcomes* are, in comparison to the education indicators, underdeveloped. Elliott (1993) has proposed that there is a cluster of health-enhancing behaviors that contribute to sound development during adolescence and throughout the life-span. Drawing on the research on clusters of health-compromising behaviors during adolescence, he puts forward the notion of healthy lifestyles as distinctive modes of living, defined by a pattern of behaviors occurring with some consistency over time.

Evidence for health-enhancing lifestyles during adolescence is rather limited, partially due to the dominant focus on problems or poor outcomes. There is evidence for a cluster of health-enhancing behaviors that includes exercise, adequate sleep, the use of safety belts, a healthy diet, seeking appropriate medical treatment, preventive physical examinations, and dental hygiene (Elliott, 1993; Hansell and Mechanic, 1990). Evidence for the clustering of health-compromising lifestyles, including substance use and delinquent behavior, is relatively strong (Merrill, 1994; Dryfoos, 1990; Fagan, Cheng, & Weis, 1990; Elliott & Morse, 1989; Donovan & Jessor, 1985).

The following are potential indicators of positive adolescent health that are currently being collected on a national level and that could be employed in studies to test Elliott's idea of a cluster of health-enhancing behaviors during adolescence:

Exercise and fitness, including participation in sports. The U.S. Public Health Service, in issuing its objectives for the year 2000, acknowledges the need to increase by at "least 50 percent the proportion of children and adolescents in 1st through 12th grade who participate in daily school physical education" (U.S. Department of Health and Human Services, 1991). The benefits of proper diet and physical activity may be particularly important during adolescence, both as a preventive measure in promoting sound development during the adolescent years and in discouraging specific diseases later in life (Sallis, 1993).

National data on selected health-risk behaviors, including information on physical fitness and healthy eating, are collected by federal agencies and by industry organizations, such as the National Sporting Goods Association, which conducts an annual survey of sports participation that includes young adolescents.

The Youth Risk Behavior Surveillance System (YRBSS), developed by the U.S. Centers for Disease Control and Prevention, is a major federal effort to measure health-risk behaviors among adolescents throughout the United States, including adolescents who attend school. This system has three complementary components: national school-based surveys (collected biennially during odd-numbered years throughout the decade), state and local school-based surveys (conducted biennially during odd-numbered years throughout the decade), and a national household-based survey. In 1992, CDC and the U.S. Bureau of the Census incorporated a Youth Risk Behavior Supplement in the National Health Interview Survey and were thus able to obtain data from youth attending school and those not attending school, for example, dropouts. Also participating in the survey were college-aged youth, including those who had not finished high school, those who had completed high school but were not attending college, and those attending college (Kolbe, Kann, & Collins, 1993). Youth Risk Behavior Surveillance System data are used to improve health and education policies and programs for youth nationwide.

Use of seat belts. Data are collected by Youth Risk Behavior Survey. Persons aged 12-13 years were significantly less likely than those aged 18-21 years to have reported "always" using safety belts when riding as a passenger in a car or truck.

Dental hygiene. Adolescence is a pivotal period for dental and oral health, including prevention of dental caries, periodontal disease and malocclusion (Albino & Lawrence, 1993). National survey data on dental health problems of adolescents are collected by the National Institute of Dental Research, and through other surveys by the U.S. Department of Health and Human Services, including the National Health Interview Survey. These national surveys have yielded limited information about subgroups of the population (OTA, 1991).

Healthy diet. The U.S. Department of Health and Human Services collects data related to adolescent nutrition through various surveys, including the Youth Risk Behavior Survey, the National Health and Nutrition Examination Survey (NHANES), the Hispanic HANES, and the National Health Interview Survey. The U.S. Department of Agriculture collects data through its Nationwide Food Consumption Survey, the Diet and Health Knowledge Survey, National Evaluation of School Nutrition Programs, and the Continuing Survey of Food Intakes by Individuals, which is one component of the National Nutritional Monitoring System (OTA, 1991).

Positive Mental Health. Compas (1993) has synthesized the research on the positive mental health outcomes of adolescents and has proposed a multiaxial framework. Based on this framework, "positive mental health during adolescence is defined as *a process characterized by development toward optimal current and future functioning in the capacity and motivation to cope with stress and to involve the self in personally meaningful instrumental activities and/or interpersonal relationships. Optimal functioning is relative and depends on the goals and values of the interested parties, appropriate developmental norms, and one's sociocultural group*" (pp. 166-167, italics author's). Significantly for the potential of mental health as an indicator, Compas argues that the construct of positive mental health cannot be characterized by a single profile.

The development of an indicator for good mental health among adolescents would be highly desirable, given its potential linkage with other specific indicators of the health status of adolescents and their linkage with educational achievement. Furthermore, assessments of adolescents reveal that mental health issues (reports of loneliness and depression, concerns about domestic violence and abuse) lead their list of health care needs (Millstein, 1993).

Indicators of Preparation for Adult Roles

Another positive indicator of adolescent development is that older adolescents demonstrate preparedness for roles assumed as adults. The ability to be a caring friend and family member, and the ability to function productively as a member of the larger society are important, including the *capacity to be a responsible parent and citizen*. To understand the changing role adolescents assume in both the family and society, we focus on preparation of the adolescent for parenthood and for citizenship as two critical indicators.

Responsible Parenthood

Whether mother or father to a child, caregiver of a young child, or even an adult who has little or no contact with children, an important capacity is to be able to act in a parental role. Components of responsible parenthood, as identified by the Task Force on Meeting the Needs of Young Children (1994), include being knowledgeable about infant, child, and adolescent development, developing skills to support children and adolescents with developmentally appropriate guidance, knowledge of and access to family planning services and contraceptive methods, and having the motivation to be a good parent. Responsible parenthood represents a relatively new set of outcomes for the indicator field and requires further discussion regarding whether, using public funds, the United States wishes to invest in preparing youth for parenthood and in subsequently monitoring the outcomes of this preparation.

Adolescents acknowledge their need for information, skills, and support to become effective parents (Hayes, 1987). The Alan Guttmacher Institute recently reported (1994) that close to half (48%) of American teens (ages 15-19) say that their knowledge of sexuality and reproduction is inadequate. Even less guidance is provided to adolescents about how to resist peer pressure and the predation of older men in the case of young adolescent girls (Males, 1993). While families are ideally the first source of information about parenthood, a range of institutions, including schools, religious institutions, and community-based youth serving organizations can educate adolescents for parenthood (Task Force on Meeting the Needs of Young Children, 1994). Parent education programs should involve both genders, start no later than adolescence, but preferably begin in elementary school, and be age-appropriate and culturally sensitive (Task Force on Meeting the Needs of Young Children, 1994) including

- The development of infants, young children, and adolescents, and how parents, families, and communities can meet their needs
- Models of childrearing, parenting skills, and the significance of family composition and environment on child development
- Impact of childbearing and child rearing on the educational and occupational choices of parents, especially mothers
- Human reproduction, including the role of overall health in reproductive outcomes; methods of birth control, including abstinence; the importance of health protection and promotion in the prenatal period
- The causes of sexually transmitted diseases and ways of avoiding them
- The effect of behavioral and environmental threats (including stress, poor nutrition, violence, and substance abuse) on the health of pregnant women, children, and families
- The availability of social services and other neighborhood supports, ranging from family planning and early intervention services for families at risk to Head Start programs and community health and social services (pp. 29-30).

Yet preparation for parenthood, which involves becoming a nurturing, caring adult for future generations whether one becomes a parent or not, constitutes a major gap in all American adolescents' current transition to adult roles. Existing programs are typically targeted toward specific groups of adolescents after they become pregnant or parents, e.g., adolescent parenting programs. While effective programs of this kind are urgently needed, such programs would be optimal prior to pregnancy or decisions to have children. Part of responsible parenthood involves decisions about when, and if, to have children. Many American adolescents are having children when they are developmentally, socially, and economically unprepared for the responsibility of and caring for vulnerable babies.

Parenthood programs for young men especially need attention. Parenting education usually focuses on the adolescent mother. However, small-scale programs that pay particular attention to the role of the adolescent father have been developed to enhance father-child involvement (Hayes, 1987). Interventions to encourage adolescent fathering often involve a comprehensive approach that combine parent education with community services, school activities, employment training initiatives, and life skills training. An example of such a program is Avance, a family support and education program, serving Mexican American families in Texas. Evaluations show that this program improves the families' ability to provide an emotionally stimulating and nurturing environment for their young children, positively influences parents' attitudes toward childrearing, and expands parental use of community resources (Task Force on Meeting the Needs of Young Children, 1994).

Responsible parenthood must also be based on the ability of parents to provide a minimum level of economic resources to support the family unit. Barring changes in U.S. economic and social policies regarding income support to families and job creation, young adults must be gainfully employed at wages that are adequate to support a family unit. Thus, this aspect of responsible parenthood intersects with indicators regarding the economic capacity of the adolescent to support him/herself and dependents, related to educational attainment (Nightingale & Wolverton, 1993).

Responsible Citizenship

A second aspect of adolescent roles is the preparation for responsible citizenship. A democratic society rests on an educated and informed electorate that is knowledgeable about the institutions and processes of their political system as well as a wide range of domestic and international issues. Such citizens vote regularly in elections at the local, state, and federal levels. They participate in the rich array of voluntary and community associations that are so characteristic of American society.

Citizenship indicators are part of the National Goals Initiative. Knowledge of civics is already being collected at the national level, but data collection regarding community and service learning and voter registration at age 18 is not systematic or widespread. Of these indicators, voter registration is the best candidate for an outcome indicator of likely participation as an adult citizen.

The National Education Goals Panel's Resolution on the Assessment of Citizenship recommends three indicators as relevant assessments of citizenship: knowledge of civics, involvement in community service, and voter registration at age 18.

Civics Knowledge. Readiness for responsible citizenship is one positive aspect of adolescent growth. Historically, the goal of educational institutions, both public and private, has been to prepare young people for responsible participation in a democratic society by teaching appropriate curricula on political theory and processes and the responsibilities of American citizens.

American schools today appear to have failed to educate young people in civics. In 1988, less than half of all twelfth grade students understood specific governmental structures and functions, and only six percent understood well the role of various political institutions (National Education Goals Panel, 1992). According to the State Assessment Center of the Council of Chief State School Officers, only two or three states assess high school students' knowledge of citizenship (National Education Goals Panel, 1992).

The National Assessment of Education Progress (NAEP) is a state-by-state assessment in specific subject areas occurring every three years at the 4th, 8th, and 12th grade levels. The National Education Goals Panel recommends that knowledge of citizenship, including an understanding of the political, legal, and economic systems, be assessed by state and be aggregated at the national level by the NAEP. The pressures on NAEP to collect a broad array of information are great, and consideration of the inclusion of additional data collection must be carefully weighed against costs and strains on students and the educational testing system. However, to the extent that the United States is committed to broad participation of knowledgeable citizens in its democratic form of government, some means of assessing basic knowledge of civics seems advisable.

Community Service and Volunteer Work. Participation in community service and service learning is another potential positive indicator of adolescent development. This service builds skills and discipline, provides self-respect and elicits respect from others, and contributes to a vigorous public life. The National and Community Service Trust Act of 1993 recognized that ". . . Residents of low-income communities, especially youth and young adults, can be empowered through their service and can help provide future community leadership." (National and Community Service Trust Act of 1993, Public Law 103-82, Sec. 2, Paragraph 6 [September 21, 1993]). The legislation, however, is not limited to youth from low-income families, and an equally compelling case can be made for more economically advantaged youth.

Information on community service is not systematically collected at this time at the local, state or national level. The surveys that do exist reveal a range of participation in voluntary activities. Estimates of voluntary activity during adolescence range from 13 percent of the 16- to 19-year-olds according to the U.S. Department of Labor's Bureau of Labor Statistics in 1990 (National Center for Education Statistics, 1993), to an Independent Sector survey which found that 61 percent of adolescents 12- to 17-years of age volunteered an average of three hours or more a week in 1991 (Knauft, n.d.).

A major issue, prior to the collection of data, is the appropriate definition of community service and what would constitute a meaningful indicator of such service, e.g., appropriate activities, length, and nature of service (Keith, 1994). There are no current data collected at the state or local level, and thus little is available to measure trends. The establishment of the omnibus Corporation for National and Community Service may provide a venue for collection of information on community service at the national and state levels in the future.

Voter Registration. A fundamental manifestation of citizenship and a positive indicator of adolescent development is registration to vote at age eighteen. Collection of this information (registration, nonregistration) is a relatively straightforward one, but whether agencies that have the most regular contact with adolescents (schools, motor vehicle departments) will collect and maintain such information must be addressed. Information on voter registration and voter participation is currently collected by the U.S. Bureau of the Census and is available at the national and state levels. Specific information on adolescent voting patterns at the local level could be collected by the annual survey of high school seniors--Monitoring the Future: A Continuing Study of the Lifestyles and Values of Youth--many of whom are eighteen years old, but would not include school dropouts or infrequent attendees in schools. These individuals are unlikely to register to vote, since voting has been found to be related to higher levels of education (U.S. Bureau of the Census, 1994).

A major issue is whether the United States wishes to collect systematic information on the registration of eligible voters, including their actual voting, on a national or state level. If such a system were to exist for adults, then instituting one for first time registrants would naturally follow. As long as no such system exists for adult voters, collection of such information for adolescents is questionable.

RECOMMENDATIONS FOR POSITIVE INDICATORS OF ADOLESCENT DEVELOPMENT

In an ideal world with unlimited resources, information on all the above candidates for positive indicators of adolescent development would be desirable. Indeed, the list of potential indicators could be lengthened to include others of interest such as indicators of character development. However, hard policy choices must be made, particularly with attention to the responsible use of public resources for fundamental research and for national, state, and local collection of social statistics, given the increasing competition for such resources.

With this context in mind, we recommend the further exploration of the following four indicators: (1) Perception of opportunity, (2) Involvement in post-secondary education, (3) Health-enhancing behaviors, (4) Voter registration. (The reader is referred back to the above sections on these indicators as background.)

Perception of Opportunity

Adolescents' perceptions of opportunity are key factors in their current behavior and future achievements. Adolescents with views of negative future outcomes are not likely to engage in prosocial behavior (Oyserman & Markus, 1990). Perception of opportunity affects all aspects of an adolescent's life, including involvement in education and engaging in health-promoting activities (Wilson, 1993). Adolescents who perceive future opportunities are more likely to move into constructive, positive adult roles in society.

Involvement in Post-Secondary Education

A primary concern of the United States must be the educational capacities and high-level skills of its citizens. The educational attainment of a society's members is a major factor in economic development, individual involvement in the community and political life, and the adoption of healthy behaviors. Currently indicators focus on the negative outcomes regarding education, such as high school dropout and illiteracy. The global, current economy requires high school graduation as a minimum and post-secondary matriculation and attainment of post-high school education or training as highly desirable.

Health-Enhancing Behaviors of Adolescents

Health-enhancing environments for adolescents support adolescents in making a successful transition to adulthood (Elliott, 1993). Measurement of health-enhancing behaviors requires a broadbased survey covering adolescent reports of physical and mental health status. Questions regarding exercise, eating habits, and daily activities tap into health-promoting patterns. The YRBSS could be adapted to include health-enhancing, as well as risky, behaviors.

Considerable work already exists on the conceptualization of positive mental health among adolescents and identification of a research agenda (Compas, 1993). However, the harnessing of this work for the development of an indicator will require research resources. As conceptualized by Compas (1993), positive adolescent mental health requires a multiaxial framework involving different perspectives or sources (adolescents, parents, teachers, peers, mental health professionals), developmental status, and sociocultural factors. Within this framework, two dimensions of positive adolescent mental health involve the development of skills to cope with stress, and the development of skills to engage in personally meaningful activities.

Health-enhancing behavior is likely to vary according to community and environmental conditions. Thus, information at the local or community level is likely to be most relevant for public policy and targeted interventions. State and national data can provide general information on the health status of adolescents, but is not likely to be informative for local, programmatic interventions.

Voter Registration

The United States is viewed as the leading democracy in the world. However, its citizens vote at comparatively low rates. As an indicator of interest in and commitment to citizenship, voter registration at 18 and subsequent voting would seem simple indicators to collect.

As discussed above, monitoring of the voting behavior of American citizens will require upgrading. At present, the U.S. Census Bureau collects information on voter registration for different age groups and by gender, and race/ethnicity. States and local entities vary in their collection of information on voter registration. Any effort to collect information on voter registration at age 18 should be part of a reformed data system to collect information on voter registration for the entire eligible adult population.

Unlike most indicators, voter registration and subsequent voting are relatively straightforward: either a person votes or does not, registers or does not. What is lacking is the public consensus and the will to engage in collecting this information on a systematic basis as an indicator, not only as a positive indicator of adolescent development, but also of the functioning of a democratic society.

CONCLUSION

Indicators of adolescent development must include the full range of "outcomes" from the socially desirable to problem behaviors. The current imbalance toward the negative or problematic aspects of adolescent development should be redressed. Similar to the measurement of negative indicators of adolescent development, the collection of positive indicators is not straightforward and possibly more daunting. Significant barriers, depending on the specific indicator, include the paucity of basic or fundamental research related to the indicator; issues of validity, particularly construct validity; multiple sources of data and the need to triangulate among data sources; and developmental and sociocultural factors.

To the extent that the collection of specific indicators influences their social valence, the careful identification of positive indicators of adolescent development can play an important role in changing the ways in which a society views its adolescents. This paper provides a starting point for such a needed effort.

References

Alan Guttmacher Institute. 1994. *Sex and America's Teenagers*. New York: The Alan Guttmacher Institute.

Albino, J. N. & Lawrence, S. D. 1993. "Promoting Oral Health in Adolescents," pp. 242-259. In Millstein, S. G., Petersen, A. C. & Nightingale, E. O. (eds.) *Promoting the Health of Adolescents: New Directions for the Twenty-first Century*. New York: Oxford University Press.

Center for the Study of Social Policy, Annie E. Casey Foundation. 1993. *Kids Count Data Book, State Profiles of Child Well-Being*. Washington, D.C.: Center for the Study of Social Policy.

Centers for Disease Control and Prevention. 1994. "Prevalence of Selected Risk Factors for Chronic Disease by Education Level in Racial/Ethnic Populations." *Morbidity and Mortality Weekly Report*, December 9, 1994.

Children's Safety Network. 1991. *A Data Book of Child and Adolescent Injury*. Washington, D.C.: National Center for Education in Maternal and Child Health.

Compas, B. E. 1993. "Promoting Positive Mental Health During Adolescents," pp. 159-179. In Millstein, S. G., Petersen, A. C., & Nightingale, E. O. (eds.) *Promoting the Health of Adolescents: New Directions for the Twenty-first Century*. New York: Oxford University Press.

Cross, S. E. & Markus, H. R. 1994. "Self-Schemas, Possible Selves, and Competent Performance." *Journal of Educational Psychology* 86(3): 423-438.

Csikszentmihalyi, M. & Larson, R. 1984. *Being Adolescent: Conflict and Growth in the Teenage Years*. New York: Basic Books.

Dryfoos, J. G. 1990. *Adolescents at Risk*. New York: Oxford University Press.

Donovan, J. & Jessor, R. 1985. "Structure of Problem Behavior in Adolescence and Young Adulthood." *Journal of Consulting and Clinical Psychology* 53: 890-904.

Elliott, D. S. 1993. "Health-Enhancing and Health-Compromising Lifestyles," pp. 119-145. In S. G. Millstein, A. C. Petersen, & E. O. Nightingale (eds.) *Promoting the Health of Adolescents: New Directions for the Twenty-first Century*. New York: Oxford University Press.

Elliott, D. S. & Morse, B. J. 1989. "Delinquency and Drug Use as Risk Factors in Teenage Sexual Activity." *Youth and Society* 21: 21-60.

Elster, A. B. 1994. "Adolescent Health Indicators." Paper prepared for the conference on "Indicators of Children's Well-Being," November 17-18, 1994.

Fagan, J., Cheng, Y. T. & Weis, J. G. 1990. "Drug Use and Delinquency Among Inner-City Youths." *Journal of Drug Issues* 20: 349-400.

Feldman, S. S. & Elliott, G. R., eds. 1990. *At the Threshold: The Developing Adolescent*. Cambridge, Mass.: Harvard University Press.

Gans, J. E., Blyth, D. A., Elster, A. B., & Gaveras, L. L. 1990. *America's Adolescents: How Healthy Are They?* Chicago: American Medical Association.

Hamburg, D. A. 1989. *Early Adolescence: A Critical Time for Interventions in Education and Health*. New York: Carnegie Corporation of New York.

Hansell, S. & Mechanic, D. 1990. "Parent and Peer Effects on Adolescent Health Behavior," pp. 43-65. In K. Hurrelmann and F. Losel, eds. *Health Hazards in Adolescence*. New York: Walter de Gruyter.

Hauser, R. M. 1994. "Indicators of High School Dropout." Paper prepared for the conference on "Indicators of Children's Well-Being, November 17-18, 1994.

Hayes, C. D., ed. 1987. *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing*. Washington, D.C.: National Academy Press.

Hechinger, F. M. 1992. *Fateful Choices: Healthy Youth for the 21st Century*. New York: Hill and Wang.

Kane, T. J. 1994. "Postsecondary and Vocational Education: Keeping Track of the College Track." Paper prepared for the conference on "Indicators of Children's Well-Being, November 17-18, 1994.

Keith, N. Z., ed. 1994. "School-Based Community Service." *Journal of Adolescence, Special Issue* 17(4): 311-409.

Knauft, E. B. n.d. *America's Teenagers as Volunteers*. Washington, D.C.: Independent Sector.

Kolbe, L. J., Kann, L., & Collins, J. L. 1993. "Overview of the Youth Risk Behavior Surveillance System." *Public Health Reports* 108 (Suppl. 1): 2-10.

Koretz, D. 1994. "Indicators of Educational Achievement." Paper prepared for the conference on "Indicators of Children's Well-Being," November 17-18, 1994.

Males, M. 1993. "School-Age Pregnancy: Why Hasn't Prevention Worked?" *Journal of School Health* 63: 420-432.

Markus, H. R. & S. Kitayama. 1991. "Culture and the Self: Implications for Cognition, Emotion, and Motivation." *Psychological Review* 98: 224-253.

Merrill, J. C. 1994. *Cigarettes, Alcohol, Marijuana: Gateways to Illicit Drug Use*. New York: Center on Addiction and Substance Abuse.

Millstein, S. G., Petersen, A. C., & Nightingale, E. O., eds. 1993. *Promoting the Health of Adolescents: New Directions for the Twenty-first Century*. New York: Oxford University Press.

Millstein, S. G. 1993. "A View of Health from the Adolescent's Perspective," pp. 97-118. In S. G. Millstein, A. C. Petersen, & E. O. Nightingale, eds. *Promoting the Health of Adolescents: New Directions for the Twenty-first Century*. New York: Oxford University Press.

Moore, K. A. 1994. "Criteria for Indicators of Child Wellbeing." Prepared for the conference on "Indicators of Children's Well-Being," November 17-18, 1994.

National Center for Education Statistics. 1993. *Youth Indicators, 1993, Trends in the Well-Being of American Youth*. Washington, D.C.: U.S. Government Printing Office.

National Education Goals Panel. 1992. *The National Education Goals Report, Building a National of Learners*. Washington, D.C.: U.S. Government Printing Office.

Nightingale, E. O. & L. Wolverton. 1993. "Adolescent Rolelessness in Modern Society." *Teachers College Record* 94: 472–486.

Oyserman, D. & Markus, H. R. 1990. "Possible Selves and Delinquency." *Journal of Personality and Social Psychology* 59: 112–125.

Oyserman, D. & Markus, H. R. 1990. "Possible Selves in Balance: Implications for Delinquency." *Journal of Social Issues* 46: 141–157.

Oyserman, D. & H. R. Markus. 1993. "The Sociocultural Self." In J. Suls & A. G. Greenwald (eds.) *Psychological Perspectives on the Self.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Oyserman, D. 1993. "Adolescent Identity and Delinquency in Interpersonal Context." *Child Psychiatry and Human Development* 23: 203–214.

Oyserman, D. & E. Saltz. 1993. "Competence, Delinquency, and Attempts to Attain Possible Selves." *Journal of Personality and Social Psychology* 65: 360–374.

Pittman, K. & Wright, M. 1991. "Rationale for Enhancing the Role of the Non-School Voluntary Sector in Youth Development." Unpublished manuscript prepared for the Carnegie Council on Adolescent Development, Washington, D.C.

Sallis, J. F. 1993. "Promoting Healthful Diet and Physical Activity," pp. 209–241. In S. G. Millstein, A. C. Petersen, & E. O. Nightingale, eds. *Promoting the Health of Adolescents: New Directions for the Twenty-first Century.* New York: Oxford University Press.

Schlossman, S. & Cairns, R. B. 1993. "Problem Girls: Observations on Past and Present," pp. 110–130. In G. H. Elder, J. Model, and R. D. Parke, eds. *Children in Time and Place: Developmental and Historical Insights.* New York: Cambridge University Press.

Task Force on Education of Young Adolescents. 1989. *Turning Points: Preparing American Youth for the 21st Century.* Washington, D.C.: Carnegie Council on Adolescent Development.

Task Force on Meeting the Needs of Young Children. 1994. *Starting Points: Meeting the Needs of Our Youngest Children.* New York: Carnegie Corporation of New York.

Task Force on Youth Development and Community Programs. 1992. *A Matter of Time: Risk and Opportunity in the Nonschool Hours.* Washington, D.C.: Carnegie Council on Adolescent Development.

U.S. Bureau of the Census. August 1994. *More Education Means Higher Career Earnings* SB/94-17. Washington, D.C.: U.S. Department of Commerce.

U.S. Bureau of the Census. 1994. *Statistical Abstract of the United States: 1994* (114th edition) Washington, D.C.: U.S. Government Printing Office.

U.S. Congress, Office of Technology Assessment. 1991. *Adolescent Health--Volume I: Summary and Policy Options*, OTA-H-468. Washington, D.C.: U.S. Government Printing Office.

U.S. Congress, Office of Technology Assessment. 1991. *Adolescent Health--Volume II: Background and the Effectiveness of Selected Prevention and Treatment Services*, OTA-H-466. Washington, D.C.: U.S. Government Printing Office.

U.S. Department of Health and Human Services. 1991. *Healthy People 2000: National Health Promotion and Disease Prevention Objectives.* U.S. Department of Health and Human Services Publication No. (PHS)91-50212. Washington, D.C.: U.S. Government Printing Office.

Wilson, W. J. 1987. *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy.* Chicago: The University of Chicago Press.

Wilson, W. J. 1993. "Poverty, Health, and Adolescent Health Promotion." In *Promoting Adolescent Health: Third Symposium on Research Opportunities in Adolescence.* Washington, D.C.: Carnegie Council on Adolescent Development.

Indicators of Adolescent Problem Behaviors

Bruce P. Kennedy, Ed.D.
Deborah Prothrow-Stith, M.D.
Harvard School of Public Health

1994

Address correspondence to Bruce P. Kennedy, Harvard School of Public Health, 718 Huntington Ave., Boston MA 02115.

This paper was prepared for the Conference on Indicators of Children's Well-Being sponsored by: The Institute for Research on Poverty; Child Trends, Inc.; The Office of Assistant Secretary for Planning and Evaluation in the U.S. Department of Health and Human Services; The National Institute of Child Health and Human Development; and the Annie E. Casey Foundation.

OVERVIEW

This report examines the current status of social indicators that are available for tracking adolescent risky or problem behavior. It attempts to identify both strengths and weaknesses of the currently available data and provides recommendations for changes in the adolescent problem behavior indicator system to help improve its efficiency, quality, and utility.

The adolescent period is a time ripe for experimentation of different behaviors and lifestyles. The central developmental task of adolescence is to construct a coherent psychosocial identity. This involves an increasing independence from parents and authorities through the development of personal, sexual, occupational, ideological, and moral commitments. Commitments to socially approved roles and their implicit value structures serve as the bridge between the adolescent and the social world of the adult, providing the basis for direction and meaning in the individual's life course (Blos, 1962; Erikson, 1968; Prothrow-Stith, 1991).

With the emergence of increased cognitive power and physical maturity, adolescents become concerned with a variety of issues that relate to this task. They begin to explore the meanings of the various social, occupational, and gender roles that are presented to them, and to experiment with many of the behaviors and lifestyles that are associated with these. During this period, peer relations take on a greater significance in providing feedback concerning the self, and it is often in this context that many adolescents engage in behaviors that put them at risk for serious health and psychosocial outcomes.

Social role experimentation for most adolescents is part of normal healthy development toward future adult roles, for some, it establishes patterns of problem behavior that significantly impair their life chances. Adolescent problem behaviors include a variety of activities that are viewed as outside the norms of conventional society and are seen as detrimental to the healthy development of youth. Jessor and Jessor (1977) observed that alcohol and drug use, risky driving, delinquent behavior, and precocious sexual intercourse were correlated with each other. Based on their research, they proposed a "syndrome of problem behavior" that indicates a particular lifestyle characterized by risky behaviors. They posit that these behaviors are anticipated by a constellation of factors that include personality, environmental, and behavioral dimensions that predispose adolescent to patterns of risky or problem behavior. Subsequent studies of youths have generally supported this hypothesis (Bachman, O'Malley, & Johnson, 1980 ; Donovan, Jessor, & Costa, 1988; Elliott, Huizinga, & Menard, 1989; Farrell et al., 1992), but the degree to which these behaviors co-occur across different segments of the adolescent population are not well defined.

In a review of the problem behavior literature dealing with the overlap of juvenile delinquency, school failure, teen pregnancy, and substance abuse, Dryfoos (1990) concluded that six factors were related to all of these problem behaviors: 1) early onset of behavior problems; 2) poor school adjustment; 3) engaging in generally anti-social behavior; 4) high susceptibility to peer influence; 5) poor parenting and a general lack of parental supervision; 6) poverty and urban environment. She concluded that about 25% percent of youth will reach adulthood without the resources to adequately meet the demands and responsibilities of adult roles in the family and workplace.

Any full treatment of adolescent well-being must take into account the behavioral problems that place the youth at the greatest risk for mortality and morbidity, as well as for future psychosocial maladjustment. From a public health perspective, indicators of problem behaviors that are linked to the most prevalent and serious health and social problems for adolescents should receive the first priority in the development and continuation of any statistical surveillance system. Among all of the problem behaviors, drug use (including alcohol and tobacco), high risk driving, violence (both interpersonal and intrapersonal), and risky sexual behavior contribute the most to morbidity, mortality and other social problems (including school failure) during the adolescent period and will thus be the focus of our ensuing discussion (Kolbe, Kann, & Collins, 1993).

ALCOHOL AND DRUG USE

Alcohol and other drug use/abuse is perhaps the most significant and pervasive problem behavior engaged in by adolescents as it is implicated in a variety of other unhealthy and life threatening behaviors. Two legal drugs, alcohol and cigarettes contribute significantly to the mortality and morbidity of youths and adults. The short term consequences of cigarette use are seen in decreased physical activity by youth and for pregnant teenagers are related to lower infant birth weight and mortality (Public Health Service, 1980). Early heavy use predicts later use which is associated with approximately 400,000 adult deaths each year (Office on Smoking and Health, 1990). Studies of smoking conducted in Britain have shown that children who have tried cigarettes more than 4 times generally develop an addiction to nicotine and subsequently go on to have lengthy smoking careers (Russell, 1990). Smoking also predicts other drug use and is seen as a potential stepping stone to experimentation with other substances (Kandel, 1975). Recent surveys of American high school seniors indicate that about 28 percent of high school seniors currently smoke, 10 percent more than a half a pack a day (Johnston et al., 1993).

In addition to the long term effects on health and psychosocial functioning, heavy alcohol use also has more immediate short term consequences to adolescent well-being and is a significant contributing factor to mortality among this population. Alcohol is implicated in much of the youth life lost due to motor vehicle crashes, drownings, homicides and suicides, accounting for about half of all the injuries resulting in death from these causes (Perrine, Peck, & Fell, 1988). Drug and alcohol use also lead to a myriad of other problem behaviors including unprotected sexual intercourse which puts youth at risk for early pregnancy and for contracting STDs including HIV. Heavy drug and alcohol [illegible] are also strongly associated with poor academic attainment and high school drop out rates which in turn put adolescents at risk for a constellation of other negative consequences (Rice et al., 1985).

Priority indicators for alcohol and drug use should include data for each individual on the type of drugs used, frequency and quantity of use, and age of onset.

HIGH RISK DRIVING PRACTICES

Unintentional injuries are the leading cause of death for youths aged 12-24. The vast majority of these are attributed to motor vehicle crashes, which are the leading cause of death for all persons aged 1-34. Adolescents (15-19) are at particular risk from dying or being seriously injured in a motor vehicle crash: although they represent only 6% of the licensed drivers, they account for 13% of all motor vehicle fatalities (NHTSA, 1992).

Many of the deaths from crashes are attributable to risky driving which involves driving under the influence of alcohol, lack of occupant restraint use, competitive speed, and aggressive driving. Approximately half of all motor vehicle fatalities involve alcohol and about 30 percent of adolescents aged 15-20 were intoxicated at the time of the fatal crash (NHTSA, 1992).

Among all fatality injured persons in motor vehicle crashes, 70 percent were not wearing seatbelts. With 83 percent nonuse rate, adolescents had the lowest seatbelt use rate of all fatally injured occupants (NHTSA, 1992). Jonah (1986) has shown that drinking and driving, nonbelt use, speeding and aggressive driving cluster together and concluded that these behaviors could be viewed as part of a larger set of adolescent problem behaviors as conceptualized by Jessor and Jessor (1977).

Priority indicators for this behavior include the prevalence and incidence of: driving under the influence of alcohol and other drugs, riding with an intoxicated driver, use of seatbelts, and aggressive driving. Arrest rates for DWI, reckless driving, and the number of alcohol-involved fatalities should also be monitored for this age group.

VIOLENCE

Intentional injuries resulting from violence make a significant contribution to the mortality and morbidity of the adolescent population. In addition to the emotional costs to the victims of violence, their families, and surrounding communities, injuries caused by violent behavior are estimated to cost society approximately $26 billion dollars a year (O'Carroll et al., 1993).

Homicide is the leading cause of death for young African- American males and females (15-34) and the second leading cause of death for all 10 to 19 year-olds (Hammett et al., 1992). Homicide rates among adolescents have risen since the 1980s with an increasing number attributable to firearms (Fingerhut et al., 1992). With this rise in homicides is an increase in the weapon carrying and the use of weapons in violent altercations among youth. In a recent survey over twenty-six percent of ninth to twelfth graders reported carry a weapon at least once in the previous 30 days (Kann et al., 1993).

In addition to violence against others, self-directed violence in the form of suicide attempts and completions are also of significant dimensions in the adolescent population. Suicide rates among the young have risen steadily since the 1960s and are currently the third leading cause of death for adolescents and young adults between the ages of 15 to 24 (Office of Educational Research and Development, 1991).

Key indicators for violent behaviors are the prevalence and incidence of: weapon carrying, fighting behavior (both those that result injury and those that don't), violent victimization, suicidal ideation, suicide attempts (both those that result in injury and those that don't), and the role of alcohol and other drugs in these behaviors. Additional indicators to track are the actual numbers of homicides and suicides among adolescents.

RISKY SEXUAL BEHAVIOR

Early sexual activity puts adolescents at risk for unwanted pregnancy, STDs, including AIDS, and a variety of other negative health and social outcomes, both for themselves and for their children in the case of natality (Card, 1981; Furstenberg et al. 1987; Hofferth & Hayes, 1987). Early initiation of sexual intercourse during adolescence increases the risks both for pregnancy and STDs (Hayes, 1987). Youths between the ages of 15-29 account for 86 percent of all cases of STDs. Infection rates of STDs vary up to 36 percent for adolescents, with those from low income areas having the highest rates of contraction (OTA, 1991). About 20 percent of all AIDS case are in the 20-29 year-old age group which indicates that many of these were infected with HIV during the early adolescent years (CDC, 1989). AIDS is currently the sixth leading cause of death for all adolescents and young adults between the ages of 15 and 24 (Kilbourne et al., 1990).

About 54 percent of high school students report having had sexual intercourse, among this group around 69 percent reported being currently sexually active. Eighteen percent of high school students report having had 4 or more sexual partners during their lifetime. Among those reporting that they were currently sexually active, 81 percent had used contraceptives. Forty-six percent reporting using a condom (Kann et al., 1993).

It is clear from recent surveys that risky sexual practices continue to be a major problem behavior for adolescents. Important behavioral indicators in these regards should focus on: the use of contraceptives (esp., condoms), age of first sexual intercourse, frequency of intercourse, number of partners, and the role of alcohol and drugs. Other indicators are fertility and abortion rates for adolescents.

Levels of Indicators

Taken as a whole, the problem behaviors reviewed above can be conceptualized as the focus for policy actions and preventative measures and are in themselves measurable outcomes for the national objectives put forth in Healthy People 2000 (Public Health Service, 1990). Measures that adequately track these behavioral indicators are clearly needed if we are to monitor the progress toward national goals for the health and welfare of our youth.

In addition to monitoring trends in the problem behaviors themselves, other social indicators that contribute to these behaviors are also critical to measure if informed policy decisions are to be made. It is critical to know which sociodemographic groups are at greatest risk for which behaviors and for what reasons. Simply monitoring overt behaviors will not contribute to our knowledge and understanding of the social contexts and settings which shape and support them. Without a complete, contextualized understanding of adolescent problem behavior, misguided policies and ineffective prevention efforts are designed and implemented. Indicators of individual level, family level, and community level variables are needed if we are to develop sophisticated models of problem behaviors and inform our current theories as to the causal and protective factors that lead to or away from behaviors that put adolescents at risk for maladaptations.

A basic framework for the types of indicators at each level that are crucial to a fully functional and effective indicator system is described below. This description is followed by a discussion reflecting the currently available information for each of the levels with recommendations for improvements in the future.

Individual Level Indicators

At the individual level, aside from the prevalence, incidence, and duration of all the high risk behaviors, at the minimum, basic demographic indicators that enable disaggregation of the data by age, gender, race /ethnicity, and socioeconomic status are critical to assist in the targeting of efforts to groups at greatest need. This point is brought home when comparing causes of mortality across different age and race/ethnic groups: While for all adolescents, the leading cause of death is motor vehicle crashes, this is not true for African-American adolescents for whom the leading cause of death is homicide (Hammett et al., 1992).

Indicators at the individual level should also assess such potential antecedent factors as: general psychological well-being, including self-esteem and perceived self-efficacy, and anxiety and depression; personality dimensions such as impulsivity, sensation seeking, and rebelliousness; educational and vocational aspirations; academic standing and achievement; and use of leisure time.

Use of leisure time is a particularly high priority indicator as little is known about the relative contribution of different activities to the promotion of problem behaviors. Indicators in this area should include data on the exposure to different types of media (TV, videos, movies) with different types of content (e.g., violent).

Other time-use indicators should attempt to quantify the degree of involvement in youth cultures. Youth cultures are important mediators of behavior. They provide the belief and value systems that structure the activities and concerns of adolescents. More detailed measures of lifestyle factors would help to create a richer portrait of the milieu in which youths present themselves and forge the meanings of their activities through the symbolic interchange of codes of speech, action, and dress. Indicators addressing these issues should be developed to include both cultural categories deemed as deviant (e.g., gangsta, freak, burnout) and those that are considered prosocial (school clubs, sports teams, church groups). Additional time use indicators should assess the degree and availability of adult supervision in activities outside the context of school. Information on the role of these factors in influencing problem behaviors is seriously lacking.

Family Level Indicators

Indicators of family economic stability, including parents' levels of education, occupations and incomes, health insurance coverage, along with other variables that capture parenting styles and parents own involvement in risky behaviors are vital for understanding the dynamics between the home environment and the adolescent's development.

Three critical factors that have received little attention for many of the problem behavior areas are the effects of poverty, family structure, and parental behavior. The effects of these dimensions on problem behaviors are complex, not well understood, and appear to vary as a function of gender, race and ethnicity. For example, a recent reanalysis of Gleuck's classic study of delinquency found strong effects of parenting and disciplinary styles on delinquent behavior that had been previously overlooked (Sampson & Laub, 1994).

At present, the effects of race or ethnicity cannot be disentangled from the effects of socioeconomic status on most problem behaviors (Dryfoos, 1990; Huston, McLoyd, & Coll, 1994). Persons with similar educational achievement and occupations may still differ as a function of ethnicity with regards to income, and especially to subjective measures of well being such as job satisfaction. Methods of disaggregation are needed to examine these effects among youth of differing ethnic and socioeconomic backgrounds.

Other important family indicator variables include the type of housing (e.g., own home, apartment, public housing), the number of household members who compete for resources and parental attention, and the availability of parents or other caretakers during after schools hours.

Community Level Variables

A number of community level indicators have been suggested as potential antecedents to adolescent problem behaviors. Among the most important of those suggested deal with the quality of the neighborhood and surrounding community. Indicators of quality are typically measured by the levels of poverty, crime, unemployment, and segregation within the community. Other community factors that are important are the quality of the schools, health care delivery systems and the presence and involvement of other local institutions such as churches and recreational facilities.

The importance of the community level variables should not be lost in the rush to collect individual prevalence and incidence rates for specific problem behaviors. Community factors such as levels of poverty, segregation, and unemployment create high risk environments for youths and have been shown to have profound effects on drug use, violence, teen pregnancy, and school failure (National Research Council, 1993).

To fully understand the trends and dynamics of adolescent problem behaviors we need to collect data on all three of these levels. The importance of the family and community context in shaping and fostering healthy child and adolescent adaptations is hardly a controversial view of human development: It is an accepted truism that socialization, and thus healthy development, is an interactional process between persons and context, yet information on these factors are rarely integrated with each other. While it is a difficult task to disaggregate data along all three of these levels, it is critical to develop methods that allow for such analyses and reporting. The rest of the paper will focus on how well the current data sources on indicators of adolescent problem behaviors afford such analyses.

Status of Adolescent Problem Behavior Indicators with Recommendations

At present, there are several different federal survey programs underway that accumulate timely data on indicators of adolescent problem behavior. There is a degree of overlap among some of these surveys as to the types of indicators collected, but not all cover the behaviors to the same extent, nor do all collect vital information on the individual, family, and community levels discussed above. A detailed review of each of the survey programs is beyond the scope of this paper. Instead, the focus is on the extent to which priority indicators are measured and tracked within the federal statistical system. Recommendations for improvements conclude this paper.

Primary data for individual level problem behavior indicators can be obtained from several different sources. In general, the key indicators of adolescent problem behaviors are being adequately monitored by various components of the statistical system, yet other individual level variables are sorely absent.

Key indicators on the prevalence and incidence of drug use behaviors are tracked on a regular basis by The Monitoring the Future Survey (MTFS), the National Household Survey of Drug Abuse (NHSDA) and the more recent, Youth Risk Behavior Surveillance System (YRBSS). Indicators of risky driving practices are collected by both the MTFS and YRBSS. In addition, data on alcohol involvement and seatbelt usage in fatal motor vehicle crashes can be obtained from the Fatal Accident Reporting System (FARS), and arrest rates for driving while intoxicated (DWI) can be obtained form the Uniform Crime Reports.

Key indicators related to violence can be constructed from the YRBSS, which contains questions related to the incidence and prevalence of weapon carrying, fighting, and suicide ideation and attempts. Data on arrests for violent behavior, victimization, and actual homicides and suicides are available from the Uniform Crime Reports, the National Crime Victimization Survey, and the Vital Statistics, respectively.

It should be acknowledge that arrest data are problematic indicators of incidence of violence as all episodes of violence do not lead to arrests and poverty increases the likelihood of arrest. Nonfatal episodes of violence that result in injury are not currently be adequately measured in that emergency department assault data are not collected routinely and school suspension rates for violence or weapon carrying are not collected in a standardized manner. Surveys such as the YBRSS and Crime Victimization Survey provide some remedy for these data needs, but there is still room for improvement. Developing more detailed e-codes for emergency rooms and trauma centers so that treatment for violence related injuries could be better monitored would be extremely useful.

Primary indicators of risky sexual behavior are also being tracked regularly by the YRBSS which collects indicators on the frequency of sexual intercourse, number of partners, the use of contraceptives, and alcohol and drug use during sexual intercourse. Other sources of containing more detailed information are the National Survey of Family Growth, the National Survey of Adolescent Males, and the National Longitudinal Survey of Youth. Data on fertility rates can be obtained from the Vital Statistics and the Centers for Disease Control tabulates abortion rates from state provided data as well as STD rates.

Indicators of adolescent problem behaviors are generally well collected by the various government agencies that have responsibilities for specific program areas. However, there is considerable fragmentation and very little synergy from complementary efforts. The fragmentation by problem area, sexuality, violence, or drug use, is more a reflection of government organization than the actual occurrence of these behaviors in youth and has led to duplications of effort that often produce incompatible data for comparisons across problem areas. As argued above, adolescent problems behaviors generally co-occur and to fully understand this we need to be collecting indicators of all problem behaviors in the surveys of youth.

Promotion of Interagency Coordination

Recent efforts have attempted to address this problem. Perhaps the most promising of these is the cross-agency effort spearheaded by the Centers for Disease Control. This work has culminated in the Youth Risk Behavior Surveillance System (YRBSS). The YRBSS is a school based survey that is conducted biennially with a national probability sample of high school students. The YRBSS redresses the fragmentation issue by collecting data on all of the major adolescent problem behaviors in one survey framework and thus, the YRBSS is a major step forward in the development of problem behavior indicators for youth.

In addition to the national probability sample, YRBSS personnel are assisting state and city health and education departments to conduct their own surveys using the core YRBSS questions. These new state and city data sources should provide local policy makers and program administrators with timely information that more accurately captures the adolescent problems in their communities. Basic surveillance systems like the YRBSS are fairly easy to implement at the local level in a cost effective manner and we encourage its wide spread use on an annual basis by state and local departments.

Development of a Truly Comprehensive Indicator System

There are still critical gaps in the adolescent problem behavior indicator system. Monitoring problem behaviors within the single framework of the YRBSS has been a major improvement, and being able to track these an a regular basis will assist in the measurement of progress toward national health objectives. However, an indicator system that simply provides surveillance of behavioral outcomes will not yield other information that is vital for policy decision making. Monitoring trends without data on determinants and correlates can tell us if these problems are increasing or decreasing, but observing that rates of violence, drug use, drunk driving, and teen pregnancy go up or down will not advance our knowledge as to why these trends are happening, and will not aid in the formation of sound policies to alter negative trends.

Indicators of other individual, family, and community level characteristics are either absent completely, or are scattered among different data sources that focus on one or two behaviors making it difficult to assess the impact of these factors on adolescent problem behavior as a whole. The YRBSS, while collecting data on all of the priority problem behaviors and some basic individual demographic information, does not collect data on other relevant individual level, family level, or community level variables. Some of these can be found in the MTFS survey, which has a little more detail on individual and family level indicators, but does not sample as broad a range of problem behaviors. The most detailed information is available for sexual practices from the National Family Growth Survey, the National Survey of Adolescent Males, and the National Longitudinal Survey of Youth, but this detail can not be applied for the same individuals to other risky behavior making it difficult to determine the correlations among them.

It is evident that there are still some major developments be made in this area. Despite these problems, a truly comprehensive indicator system is not beyond reach. There are several different approaches that can be further developed to address the needed data areas. The least costly would be to simply add more questions to existing data collection systems so that they provide more comprehensive coverage for all three levels of analysis. Methods for validly collecting more detailed individual level indicators such as personality, psychological well-being, participation in youth cultures, and use of leisure time in a cost-effective manner have not been fully explored and this is an area for future attention. This level of individual detail may be beyond the scope of school-based questionnaires, but novel strategies could be developed to get at these important antecedents.

Consider a National Longitudinal Survey of Youth Every Decade

More costly, would be the initiation of a new National Longitudinal Youth Survey that would encompass all of the problem behaviors as well as other detailed individual, family and community level indicators. Studies of this sort have the advantage over current cross-sectional surveys of being able to make more precise statements about causal and developmental factors regarding adolescent problem behaviors. A problem with most of the past studies is that they haven't included the full range of adolescent behaviors, and instead focus on one or two, such as alcohol and drug use or sexuality. Given the time and expense of national longitudinal studies, it is crucial that better coordination among agencies be fostered so that the data needs of each can be included in a single comprehensive survey. Due to the rapidly changing nature of society, and the impact of these changes on the development of youth, we would recommend that a major longitudinal study focusing on adolescents be implemented every ten years so that these dynamics can be better understood.

Develop and Include a Consistent Set of Family Level Indicators

At a minimum, following the suggestions of Zill and Daly (1993), we would urge that a set of basic family level indicators be developed and collected in a systematic and consistent fashion across surveys so that tabulations by family characteristics can be made. Family level information that assesses the conditions of adolescent households are severely lacking in the indicator system. Adequate indices of household resources are usually missing in most of the surveys. Some of this data can be obtained indirectly by having the adolescent either report parent's incomes or at least occupations and educational attainment levels. Youths' reports of father's occupation have been shown to be as valid as the father's own report (Hauser and Featherman, 1977). The validity of adolescents' reports of their parents' incomes is less clear and methods of getting at this information is an area for development. Other family level indicators such as type of housing, location of dwelling, number of persons in the home, parental availability for supervision etc., should be able to be obtained through direct questions added to existing surveys.

Develop Linkages to Census Data to Obtain Community Level Indicators

Other important data that need to be added to the present system involve community level indicators. This is another area that represents a serious gap in many of the data collection programs. To remedy this problem, methods of linking individual surveys to Census tract or block level data should be explored. One area of promise would be to simply obtain the respondent's residence zipcode which can then be linked to Census blocks. This variable could easily become a standard measure across all federal data sources and would maximize the utility of other data systems currently in place. Linkages to the Census data would provide valuable information concerning the levels of poverty, segregation, and population densities within which the adolescents live. Community characteristics of this sort are critical if we are to create more useful disaggregations of the data.

CONCLUSION

The health and well-being of adolescents is threatened both by their risky behavior and by their family and community context. While significant progress has been made in developing indicators that track these risky behaviors there is a tremendous need for data linking risky behaviors to family and community factors. Timely and reliable data on the most important adolescent problem behaviors in a framework that allows for their co-occurrence to be assessed is currently collected. However, the ability to link these to other possible correlates and antecedents is sorely limited. The role of individual, family, and community level characteristics in shaping and maintaining these behaviors is not well understood. Data collection efforts that can link up these three levels so that individuals can be understood in the context of their families and the communities are of prime importance if we are to begin to adequately address the complex interactive forces that contribute to the tragic loss of happiness and life among American youth. Based on our overview of the adolescent problem behavior indicators system we make the following recommendations:

1) Continue to promote interagency cooperation such as that fostered by the CDC's YRBSS program. Wherever possible, strongly encourage agencies, and their grantees, to use consistent measures for similar behaviors so that results are comparable across studies.

2) Continue to provide assistance to state and city health and education departments to implement their own YRBSS. Use of this consistent measure will provide the most cost effective means for state and local level needs assessment and program evaluation activities.

3) Develop more comprehensive indicators so that analytic linkages can be made between individual, family, and community level factors. A priority data item that should be collected in all surveys are valid measures of family resources (e.g., SES). Measures of family level indicators should be developed in collaboration among agencies so that a consistent system can be implemented across programs. Methods for making linkages to Census data or other sources of community level indicators should be further developed.

4) With interagency coordination, plan and launch another National Longitudinal Youth Survey that incorporates measures of all problem behaviors as well as detailed individual, family, and community level characteristics. Initiate studies of this type on a decennial basis.

References

Bachman, J. G., O'Malley, P. M., & Johnston, L. D. (1980). Correlates of drug use: Part I. Selected measures of background, recent experience, and ;lifestyle orientations. (Monitoring the Future Occasional Paper 8). Ann Arbor, MI: institute for Social Research.

Blanchen, A. J. (1993). Measuring the use of alcohol and other drugs among adolescents. Public Health Reports, 108, 25-30.

Blos, P. (1962). On adolescence. New York: Free Press.

Campbell, A. (1976). Subjective measures of well-being. American Psychologist, 31, 117-124.

Card, J. J. (1981). Long-term consequences for children of teenage parents. Demography, 18, 137-156.

Centers for Disease Control. (1989). AIDS and human immunodeficiency virus infection in the U. S.: 1988 update. Morbidity and Mortality Weekly Report, 38, 1-38.

Centers for Disease Control. (1990). Weapon-carry among high school students, U. S., 1990. Morbidity and Mortality Weekly Report, 40, 617-619.

Donovan, J. E., Jessor, R., Costa, F. M. (1988). Syndrome of Adolescent Problem Behavior in Adolescence: A replication. Journal of Consulting and Clinical Psychology, 56, 762-765.

Dryfoos, J. G. (1990). Adolescents at risk: Prevalence and prevention. New York: Oxford University Press.

Elliott, D. S., Huizinga, D., & Menard, S. (1989). Multiple problem youth: Delinquency, substance abuse and mental health problems. New York: Springer-Verlag.

Erikson, E. H. (1968). Identity: Youth and crisis . New York: W. W. Norton.

Farrell, A. D., Danish, S. J., & Howard, C. W. (1992). Relationship between drug use and other problem behaviors in urban adolescents. Journal of Consulting and Clinical Psychology, 60, (pp. 705-712).

Fingerhut, L. A., Ingram, D. D., Feldman, J. J. (1992). Firearm and nonfirearm homicide among persons 15 through 19 years of age. JAMA, 267, 3048-3053.

Furstenberg, F., Brooks-Gunn, J., and Morgan, S. (1987). Adolescent mothers and their children in later life. Family Planning Perspectives, 19. 142-151.

Hammett, M., Powell, K. E., O'Carroll, P. W., & Clanton, S. T. (1992). Homicide surveillance- United States, 1979-1988. Morbidity and Mortality Weekly Report, 41, 1-33.

Hauser, R. M., & Featherman, D. L. (1977). The Process of Stratification. New York: Academic Press.

Hayes, C. (Ed.). (1987). Risking the Future, Vol. I. Washington, DC: National Academy Press.

Hofferth, S & Hayes, C. (Eds.). (1987). Risking the Future, Vol. II. Washington, DC: National Academy Press.

Huston, A. C.; McLoyd, V. C.; & Coll, C. G. (1994). Children and poverty: Issues in contemporary research. Child Development, 65, 275-282.

Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1993). National survey results on drug use from the Monitoring the Future study, 1975-1992. National Institute on Drug Abuse (DHHS pub. no. 93-3597). Washington, DC: U.S. Government Printing Office.

Kandel, D. (1975). Stages in adolescent involvement in drug use. Science, 190, 912-914.

Kann, L., Warren, W., Collins, J. L., Ross, J., Collins, B., & Kolbe, L. J. (1993). Results from the national school-based 1991 Youth Risk Behavior Survey and progress toward achieving related health objectives for the nation. Public Health Reports, 108, 47-55.

Kilbourne, B. W., Buehler, J. W., & Rogers, M. F. (1990). AIDS as a cause of death in children, adolescents, and young adults. American Journal of Public Health, 80, 499-500.

Kolbe, L. J., Kann, L., Collins, J. L. (1993). Measuring the health behavior of adolescents: The Youth Risk Behavior Surveillance System. Public Health Reports, 108, 2-10.

National Highway Traffic Safety Administration (1992). Fatal accident reporting system, 1990. Washington, DC: U. S. Department of Transportation.

National Research Council (1993). Losing generations: Adolescents in high risk settings. Washington, DC: National Academy Press.

O'Carroll, P.W., Harel, Y., & Waxweiler, R. J. (1993). Measuring adolescent behaviors related to intentional injuries. Public Health Reports, 108, 15-19.

Office of Educational Research and Development. (1991). Youth Indicators 1991. Washington, DC: U. S. Department of Education.

Office on Smoking and Health. (1990). Smoking and Health: A National Status Report. Centers for Disease Control (DHHS pub. no. 87-8396). Washington, DC: U.S. Government Printing Office.

Office of Technology Assessment. (1991). Adolescent Health, Volume 1: Summary and Policy Options. Washington, DC: U. S. Government Printing Office.

Perrine MW, Peck RC, & Fell JC. (1989). Epidemiological perspective on drunk driving. Surgeon General's workshop on drunk driving: Background papers, Washington DC, 1988, December 14 (pp. 35-76). Rockville, MD: U.S. Department of Health and Human Services.

Prothrow-Stith, D., & Weissman, M. (1991). Deadly Consequences: How violence is destroying our youth and a plan to begin solving the problem. New York: HarperCollins.

Rice, D. P., Kelman, S., Miller, L. S., & Dunmeyer, S. (1985). The economic costs of alcohol drug use and mental illness. Public Health Service (DHHS Pub. No. 90-1694. Washington, DC: U.S. Government Printing Office.

Russell, M. H. (1990). The nicotine addiction trap: A 40-year sentence for four cigarettes. British Journal of Addictions, 85, 293-300.

Sampson, L. J. & Laub, J. H. (1994). Urban poverty and the family context of delinquency: A new look at structure and process in a classic study. Child Development, 65, 523-540.

Zill, N. & Daly, M. (eds.). (1993). Researching the family. Washington, DC: Child Trends.

DISCUSSANT PAPER

Session VII: Social Development and Problem Behaviors

by J. J. Card and James L. Peterson
Sociometrics Corporation
Los Altos, CA

It is very useful to think about, and attempt to gain national consensus on, indicators of well-being in a given age group. In so doing we articulate our common goals as a society. We attempt to find common ground, even as we celebrate diversity.

There are many steps in the indicator-development process: conceptualization, identification, choice, measurement, data collection, analysis of trends, interpretation of trends, and, finally, development of appropriate policy and intervention programs.

In our view this session, indeed this conference, was aimed at thinking about the first five of these steps: the first three--conceptualization, identification, and choice--in detailed fashion; the latter two--measurement and data collection--in more preliminary fashion, all with a practical eye toward improving the pool of available data for research and policymaking in this area.

Let us summarize the four papers comprising this session, assess how well each has met these goals, and offer suggestions for improvement. The papers divide into positive and negative indicators in early childhood and adolescence.

LAWRENCE ABER

"POSITIVE MEASURES IN EARLY CHILDHOOD"

Summary

The Aber paper focuses on improving concepts and measures of indicators of positive development in early childhood. Aber starts off with the well-taken point that positive and negative development and status are two different dimensions and not opposite poles of a single dimension. This is true not only in a theoretical, but also in a practical, sense. Program or policy efforts targeted at reducing negative outcomes are not the same as efforts targeted at increasing positive outcomes. For example, early childhood programs may reduce the expression of behavior problems and/or enhance children's mental health.

Aber asserts that there are few feasible, well-validated indicators of positive development in early childhood that meet Moore's criteria. These few indicators cover physical, cognitive, and social-emotional development and are found in the National Longitudinal Survey of Youth-Child Mother data, the National Survey of Children, the National Health Interview Survey, and the National Survey of Families and Households. Because of the paucity of such indicators, Aber has chosen to focus his paper on prospects for improving indicators of positive development in early childhood.

According to Aber the major drawback to development of positive indicators is the lack of a shared conception of positive development that is: (1) rooted in good theory, (2) supported by empirical evidence, (3) face valid with parents, teachers, and policymakers; and (4) able to be operationalized not just in the laboratory using labor intensive, high fidelity techniques but also in the field using creative adaptations of survey techniques. Aber proposes a series of stage-salient developmental tasks as meeting the above criteria. According to this scheme, there is a hierarchy or set of priorities to the tasks of early childhood.

For example, the primary developmental task in infancy/toddlerhood (ages 0-3) is to develop trusting relationships with primary caregivers and a sense of basic security. In toddlerhood/preschool (ages 2-5) it is to become actively curious, deeply exploratory and inquisitive. In the preschool/school stage (ages 4-7) it is to develop the ability to self-regulate thoughts, behaviors and emotions and to flexibly adjust the level of regulation to the demands and opportunities of different and changing contexts. In early school age/middle childhood (ages 6-9) it is to develop the skills to negotiate conflicts and solve interpersonal problems in non-aggressive ways. In middle to late childhood (ages 8-11) it is to consolidate a sense of self as competent and efficacious, in both social and academic spheres of life.

Most of these tasks have good laboratory-based measures. The challenge for tomorrow, according to Aber, is to translate laboratory-based measures of key constructs in child development into survey-usable measures. His paper concludes with some tips on how to do this. For example: (1) Accept the challenge of continuing to find ways to elicit information directly from children. They are the most important data source of information on how they are negotiating stage-salient tasks. (2) Make the methods to elicit information from the children interesting, compelling, relevant, understandable. (3) Make creative use of increasingly inexpensive and powerful modern technologies in field research like small, hand-held VCR's (to present stimuli) and small lap-top computers (both to present questions and record responses). (4) Plan to spend more time assessing children than adults; similarly, plan to spend more time training field researchers to work with children than with adults. (5) Use multiple methods to improve how we ask questions; for example, consider using response formats that don't require that children know how to read.

Comments

We found appealing the notion of using stage-salient developmental tasks as indicators of well-being in early childhood, for all the reasons described by Aber. We found extremely daunting but intriguing his suggestions that maybe, just maybe, these indicators could be operationalized using survey research techniques.

JOHN M. LOVE,

"INDICATORS OF PROBLEM BEHAVIORS AND PROBLEMS IN EARLY CHILDHOOD"

Summary

The paper by Love focuses on problems that are reflected in the behavior or development of children. The author lays out a conceptual scheme for identifying important indicators of these problems, illustrating the scheme with a broad but selective review of the literature. He then reviews five major national surveys for the presence of indicators falling into six topical areas, focusing especially on three of these areas. He concludes with some suggestions for improvements in the measures covered by these five surveys.

In his conceptual scheme for identifying important negative indicators, Love posits four criteria. First, indicators are important to the extent that they measure problem behaviors or characteristics prevalent enough to relate to recognized areas of concern for social policy. Delays in growth or development, learning disabilities, and significant emotional or behavioral problems are examples. Second, indicators are important to the extent that they reflect, or are consequences of, other circumstances or events in children's lives that are important, such as marital conflict or disruption. Third, indicators are important if they are associated with other areas of well-being in children's lives. For example, learning disabilities may also relate to peer acceptance. Finally, indicators are important to the extent that they predict important future behavioral or circumstantial problems, such as drug use or premature sexual activity.

The paper moves on to suggest that there are six dimensions of problems into which indicators may be classified: emotional well-being; behavior problems; school-related problems; legal problems; developmental delays and disabilities; and problems that stem from child rearing. Of these, behavior, school, and developmental problems are the most important.

Using these six dimensions Love reviews five large national surveys that are key sources of data on young children: the National Household Education Survey (NHES); the National Survey of Children (NSC); the National Longitudinal Survey of Youth: Child-Mother Data (NLSY-CM); the National Survey of Families and Households (NSFH); and the National Health Interview Survey: Child Health Supplement (NHIS-CH). In summary tables and text he lays out the design, content and coverage of these surveys in terms of the six dimensions. He also uses the criteria suggested by Moore to evaluate the strength and appropriateness of some of the childhood indicators found in these surveys.

The paper concludes with some suggestions for improvements in the design and content of the five surveys that would improve the quality and quantity of childhood indicator data. Among these suggestions are the addition of the Behavior Problems Index items to the NHES and the transformation of the NHES into a longitudinal survey; the addition of parent reports of children's school-related problems to the NLSY-CM; the inclusion of key indicators from these five surveys in the anticipated Early Childhood Longitudinal Study; and in general a call for greater comparability in measurement of indicators across diverse data sets.

Comments

The attempt to provide a conceptual scheme for the identification of important indicators of problems of children is a needed and useful contribution of this paper. In doing so childhood indicators are embedded in broader frameworks such as social policy, related indicators of child and family well-being, and future behaviors and circumstances.

The summary of the design and content of the five data sets reviewed in the paper is useful for those seeking pointers to important sources of data on young children. The suggestions for change that conclude the paper include some very important ones. Most important is the call for greater comparability in measurement across surveys. Such comparability is key to the cumulation of knowledge and the development of consistent findings on which theory development can proceed.

Another important point made by Love is that the context of a behavior or event is critical to the interpretation of its meaning and significance. Context can be both situational (as when a child behaves differently at home and at school) and environmental (as when one child lives in a stable, harmonious family whereas another lives in a conflict-ridden household). It is important to keep the distinction in mind, both theoretically and empirically.

There are a number of ways in which this paper could be improved. Chief among these is by tightening the relationship among its parts.

For example, the four-criterion conceptual scheme offered for assessing the importance of a particular negative indicator is, as already mentioned, a good one. However, after developing this conceptual scheme, the author does not go on to apply the criteria in assessing the importance of various indicators that are available in the five data sets reviewed. Nor does he provide a list of the ideal indicators that would flow from such a scheme to use as a guideline for identifying gaps in the existing indicators data base.

The six dimensions of indicators that Love uses to categorize the field--emotional well-being, behavioral problems, school-related problems, legal problems, developmental delays and disabilities, and problems that stem from childrearing--seem reasonable, but no groundwork is laid for their development. It would have been useful if the author had shown how they flow out of the importance criteria so that we would have some confidence that they are comprehensive. Furthermore, his rationale for focusing on only three of the six is not well argued. That emotional well-being is difficult to measure and that problems with the law are already well measured are not reasons for downgrading the importance of these dimensions, though they could be reasons for suggesting that fewer resources be spent on development of indicator measures in these areas.

As already noted, Love makes a very important point about knowing the context of a behavior or event to interpret its significance. To broaden this point, it is also important to know the antecedents and consequences of the problem behaviors. In other words, indicators should measure constructs that are embedded in a theoretical framework as much as possible. To the extent possible, therefore, surveys that supply major childhood indicators should also supply the main related antecedent and consequent variables of theoretical interest. This is a point made well by the Kennedy and Prothrow-Stith paper.

An important extension of the present paper would be to assess the extent to which each of the five surveys contains this rich array of antecedent and consequent measures. In this regard, for example, the NHIS is likely to be found wanting, whereas the NSC and the NSFH are likely to be better evaluated.

R. TAKANISHI, A.M. MORTIMER, AND T.J. MCGOURTHY, "POSITIVE INDICATORS OF ADOLESCENT DEVELOPMENT: REDRESSING THE NEGATIVE IMAGE OF AMERICAN ADOLESCENTS"

Summary

The paper by Takanishi, Mortimer and McGourthy focuses on positive indicators of adolescent development. Takanishi and colleagues endorse the relatively new developmental perspective on adolescence which views this period in life as the critical transition to adult life and focuses on desirable strengths and capacities to successfully navigate the transition.

The paper suggests that the target adult roles and responsibilities span four major areas: being an educated and productive worker in a global economy; maintaining a healthy lifestyle; being a caring family member; and participating as a citizen in a democratic, multiethnic society. Consistent with their view of adolescence as preparation for eventual assumption of these adult roles, the authors propose selected indicators of positive adolescent development in the four areas of education and work, health, responsible parenthood, and citizenship.

In the area of education and work, the following indicators are proposed: "Graduation from high school, including literacy, critical thinking, and problem-solving skills ...;" and "Postsecondary educational aspirations and expectations."

Proposed indicators of health and mental health include: "Engagement in a cluster of health enhancing behaviors and attitudes ...;" "The ... competence ... to function effectively in (one's) environment, including a sense of overall subjective well-being ... and ...flexibility in dealing with stress;" and "Injury prevention, including reduction in drunk driving."

As the select indicator of preparation for responsible parenthood, the paper suggests: "Knowledge and skills for making choices about responsible parenthood."

Finally, three indicators of citizenship are proposed: "Readiness for responsible citizenship, involving knowledge of political, legal, and economic systems and appropriate participation based on rights and duties of citizens;" "Participation in service learning and community service;" and "Involvement in the democratic process through voter registration."

The paper discusses each of these indicators and ends by singling out two of the nine indicators above--mental health and voter registration at age 18--as the prime areas for development and resource allocation. As justification for the importance of the former, the authors cite the fact that mental health is an underpinning for development of competence in all areas: "When an adolescent is personally distressed or involved in risky or pathological behaviors, she or he is unlikely to benefit from the school experience to become a competent adult, and to perform adult roles." No analogous justification for singling out the voter registration indicator is provided, though the poor performance of Americans and the simplicity of measurement of the indicator are described.

Comments

This paper proposes a broad range of positive indicators in adolescence in four key areas of life: education and work, health, responsible parenthood, and citizenship. The paper is based on a laudable developmental perspective that views adolescence not in terms of the difficulties it poses for both teens and their parents, but rather as a positive transition stage to the roles and responsibilities of adulthood. This affords a rich and positive framework within which to articulate indicators of well-being for this age group.

The paper could be improved by more precise definition of a "positive" indicator as well as of its proposed set of positive indicators; greater attention to measurement, cost, and cost-benefit issues; and improved justification for its final recommendation of mental health and voter registration as the primary indicators for resource allocation.

First, clarification of the scope of the paper: What constitutes a positive indicator? While some of the paper's suggested indicators (e.g., health-promoting behaviors such as exercise) are clearly positive, others (e.g., the mortality- or morbidity-preventing behaviors such as reduction in drunk driving) appear to be negative indicators which lie outside the supposed focus of the paper. Is the reduction in the incidence or prevalence of an inherently negative indicator such as drunk driving a positive indicator? We would postulate not. We prefer the Aber scheme in which positive and negative indicators are viewed as two different dimensions instead of opposite poles of a single dimension.

The paper could also be improved by more precise articulation and definition of many of its proposed indicators. Some indicators proposed as single indicators are really diverse, multiple indicators. For example, Indicator E1, "Graduation from high school, including literacy, critical thinking and problem-solving skills that enable participation in a high technology, global economy" is really four indicators: graduation from high school, literacy, critical thinking skills, and problem-solving skills. While Worksheet 1 indicates that this indicator meets 8 of Moore's 10 criteria (incidentally, 10 is now up to 13 and Worksheet 1 should be revised accordingly), in reality only the first of these four bundled indicators--graduation from high school--meets the Moore test in this manner. The other three indicators--literacy, critical thinking, and problem-solving skills--are quite vague, and the paper does not address at all how they might be measured or even defined. This vagueness or lack of precision applies to many other proposed indicators as well. For example the paper's major indicator, mental health, is defined as the development of skills to cope with stress and to engage in personally meaningful activities. Granted these are difficult constructs to measure, but the paper should at least make an attempt to do so. For it is only when measurement issues are understood that cost and cost-benefit issues in tracking the indicator can even begin to be addressed.

This paper would also be enhanced if the authors explained further how and why they chose "mental health" and "voter registration" as their two most highly recommended indicators. The two positive mental health indicators they recommend--the development of skills to cope with stress and to engage in personally meaningful activities--appear difficult to measure and expensive to collect at the local level as the authors recommend. Moreover, these indicators of mental health, by the authors' own worksheet, meet only one of Moore's 10 selection criteria for indicators of well-being. The authors say that Moore's criteria do not go far enough but do not elucidate on this point.

Voter registration is simple to measure but there is no justification provided for its choice, from either a theoretical or empirical point of view. In order to rally national consensus around the conclusions of this paper, further justification will need to be provided.

BRUCE P. KENNEDY & DEBORAH PROTHROW-STITH, "INDICATORS OF ADOLESCENT BEHAVIOR PROBLEMS"

Summary

In their well-written and well-organized paper on indicators of problem behaviors in adolescence, Kennedy and Prothrow-Stith use a health and psychosocial developmental perspective to identify important indicators and assess the state of the field. They focus in particular on behaviors that place adolescents at risk of morbidity, mortality, and future psychosocial maladjustment. Using this perspective, they identify indicators in the areas of drug use (including alcohol and tobacco), high risk driving, violence, and risky sex as being of particular importance. In each of these areas they briefly review research on antecedents and consequences and nominate priority indicators, for example:

Priority indicators for alcohol and drug use: type of drugs used, frequency and quantity of use, and age of onset.

Priority indicators for high risk driving practices: prevalence and incidence of driving under the influence of alcohol and other drugs, riding with an intoxicated driver, use of seatbelts, and aggressive driving.

Priority indicators for violent behaviors: the prevalence and incidence of weapon carrying, fighting behavior, violent victimization, suicidal ideation, suicide attempts, and the role of alcohol and drugs in these behaviors.

Important behavior indicators of risky sexual behavior: the use of contraceptives especially condoms, age at first sexual intercourse, frequency of intercourse, number of partners, and the role of alcohol and drugs.

The authors go on to make a strong case that knowledge of the indicators themselves is of little use for policy and prevention efforts if the wider context in which these behaviors and circumstances are embedded is not also measured and understood. Thus they call for a three-tiered system of indicators at the individual, family, and community levels. Indicators at the first level focus mainly on the adolescent behaviors and circumstances of interest; family- and community-level indicators provide the variables that affect and shape the individual-level indicators.

The last third of the paper is devoted to a review of the current state of adolescent indicators together with a set of recommendations for improvement. The review of indicators is brief. Cited as sources for the various indicators are the Monitoring the Future Survey, the National Household Survey of Drug Abuse, the Youth Risk Behavior Surveillance System, the Uniform Crime Reports, the National Crime Victimization Survey, Vital Statistics, the National Survey of Family Growth, the National Survey of Adolescent Males, and the National Longitudinal Survey of Youth. The authors' recommendations for the field are: (1) promote greater interagency coordination in survey development and measurement; (2) assist states in the development of parallel indicator systems at the state and community level; (3) develop a comprehensive system of youth indicators that includes, in addition to the indicators themselves, antecedent and consequence variables at the individual, family, and community levels; (4) apply the comprehensive measures consistently across surveys; and (5) field a national youth survey, built around the comprehensive measures, with a fresh sample each decade.

Comments

By taking health and psychosocial development as their point of departure, the authors are able to move quickly to a delineation of a basic and straightforward set of problem behaviors and circumstances that form the heart of their proposed set of indicators. More importantly they go on to argue for the importance of setting these behavioral indicators in a larger set of variables--demographic, antecedent, and consequent--without which an understanding of the key indicators could not be developed or remedial policies and interventions planned.

The recommendations presented in the paper are strong, far reaching, yet very practical. Especially important is the authors' call for more cooperation among federal agencies that sponsor major population surveys that focus on youth, and a broadening of the range of indicator variables contained in each survey. Their call for a new youth survey each decade is the most ambitious; yet with studies such as the National Survey of Children and the various national education, drug and fertility surveys, the foundation for such an enterprise has been well laid.

CONCLUDING REMARKS

In conclusion, the papers in this session have made a contribution to the conceptualization, identification, and choice of key indicators of well-being and problems in early childhood and adolescence. They have also given constructive suggestions for improvement of measurement and data collection efforts in these areas.

I encourage the authors of these papers to link their efforts and conclusions in systematic fashion to the goals for the nation specified in *Healthy People 2000*. This document is a 700-page book published in 1990 which contains a national strategy for significantly improving the country's health over the decade of the '90s. Twenty two expert working groups heard testimony from over 750 individuals and organizations and obtained reviews from over 10,000 people in producing the report. The document focuses on several hundred "objectives for the nation" in 22 areas of health promotion and disease prevention such as: physical activity and fitness, nutrition, tobacco, alcohol and other drugs, family planning, mental health and mental disorders, violent and abusive behavior, educational and community-based programs, unintentional injuries, occupational safety and health, environmental health, food and drug safety, oral health, maternal and infant health, heart disease and stroke, cancer, diabetes and chronic disabling conditions, HIV infection, sexually transmitted diseases, immunization and infectious diseases, clinical preventive services, and surveillance and data systems. Age-related objectives are also provided separately for the following age groups: children, adolescents and young adults, adults, and older adults. The objectives for the first two groups are very salient to this session.

If we were to pick a single set of recommendations and food for thought from these papers, it would be the call for greater coordination in our federal statistical system for collecting information on the status of children and adolescents in this country. It is possible that better data could be collected for less money if present scattered efforts were combined into fewer, more comprehensive efforts--perhaps one or two recurrent studies (every five years?) for early childhood and one or two for adolescence. Because of the limited number of these efforts, more money could then be invested in each of them. The proximate end result would be better measurement and more comprehensive coverage of the full gamut of key indicators, their context, antecedents and consequences in each survey. The long-term result would be enhanced development of: first, both theory and empirical knowledge about the status of America's children as well as factors contributing to, and consequences of, such status; and, second, based on such knowledge: appropriate intervention strategies and policies that might be formulated.

To have a shot at this it is important that there be vigorous follow-up to this conference, with joint leadership coming from both the scientist community and the federal government.